

AMERICAN ARTISAN

WARM AIR HEATING - SHEET METAL CONTRACTING
RESIDENTIAL AIR CONDITIONING



SEPTEMBER, 1944

American Artisan Readers Report on the Post-war Market - - - - -

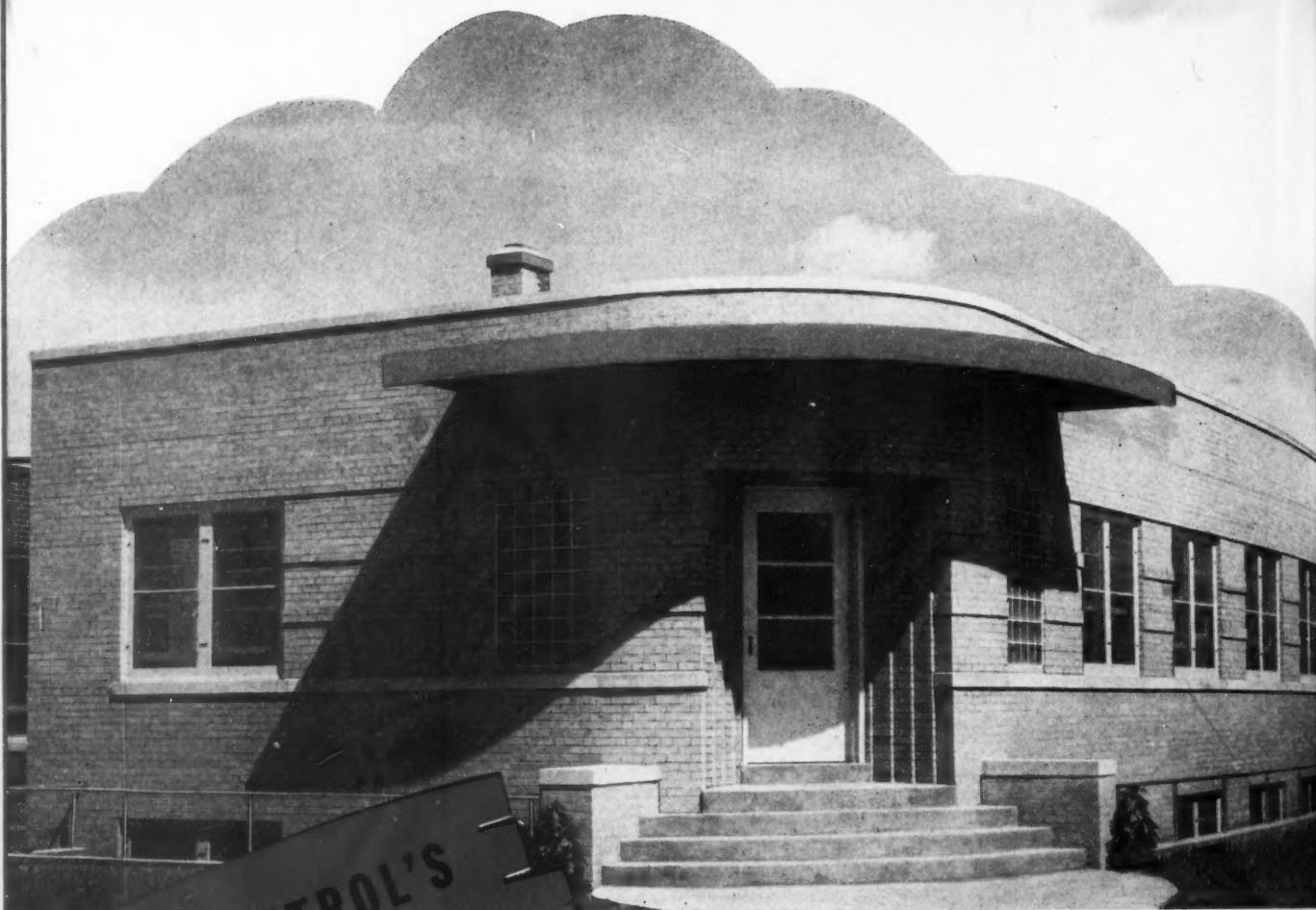
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AIR CONTROL'S
NEW BUILDING
PROVIDES ADDITIONAL
FACILITIES FOR—

*Research &
Design*

of AIR CONTROL Post War Product

To continue our reputation as leaders in new developments and improvements in our field we have added to our new development facilities. By maintaining a constant search for improvement in our products we are assuring you that you will receive the finest and most modern products when you order AIR CONTROL.

Registers • Grilles • Attic Ventilators • Ceiling Ventilators • Heating
and Air Conditioning Accessories



Air Control Products, Inc.

COOPERSVILLE • MICHIGAN

ON AND OFF 1,034,827 TIMES
... STILL RUNNING PERFECTLY

Thor

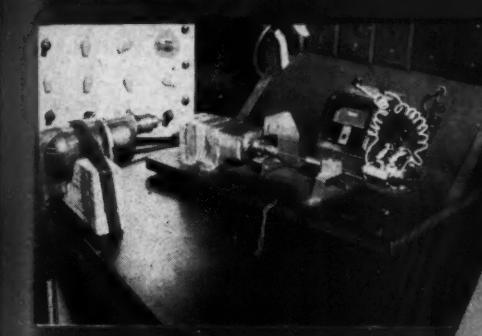
"Armored in Plastic"
ELECTRIC DRILL

Every Original Revolving Part Still
Functioning Smoothly After 1,034,827 Cycles

Over 1,000,000 on-and-off cycles working smoothly after 1,034,827 cycles! That's the record of the "Armored in Plastic" Portable Electric Drill. It has automatically starting and stopping while an in-and-out stroke each completes a cycle.

This maintains the action of centrifugal force and accelerations on all parts *still carries on* after completing 1,034,827 cycles without more and more convincing proof of the durability of these Thor plastic-housed production and maintenance drills.

Already proved—*even if the test were to stop today*—*the durability of the motor, gears, bearings and other parts of the unit!* Newly proved is the durability, greater protection and perfect alignment provided by the inner metal frame which holds the operating parts without assistance from the drill's plastic housing!



This same Thor motor, packing more power per pound of machine than is common, providing these same features of durability and top performance, is the heart of every Thor Portable Electric Tool.



LABORATORY TEST ORDER
Independent Pneumatic Tool Co.

Dec. 17, 1942

Test Item:

U14K Plastic Drill

Problem:

Durability under repeated reversal of stress. Determine number of times the drill may be started and stopped before failure of any part occurs. (Brushes excepted.) Note carefully the effect of centrifugal force on motor parts and wear due to accelerations and reversal of stress on all parts.

Continue test until first breakdown occurs.

Method:

Arrange apparatus for automatic on and off switching. Each time the drill is turned on it must come up to full speed. Each time the drill is shut off it must stop completely. Full running speed and complete stops must be attained to produce the maximum centrifugal stress in motor windings in both the outward and inward directions. The inrush of starting current should be maximum to secure severest test of windings and utmost stress due to accelerations.

DAILY LABORATORY TEST REPORT

June 18, 1944

Item: U14K Plastic Drill.

Problem: Durability under repeated reversal of stress.

Progress: 1,034,827 on-and-off cycles completed. Each original unit part - armature, commutator, stator, ~~brushes~~, bearings, seal intact and running perfectly.

Final Maintenance: Second set of brushes replaced; standard lubrication.

D. Rebenzien
Test Engineer

For complete information and specifications of all types and models of Thor Portable Electric production and maintenance tools write today for Thor Catalog 38.



• DRILLS

• HAMMERS

• SCREWDRIVERS

• SAWS

• NUT SETTERS

• GRINDERS

Thor Portable Pneumatic and Electric Tools
INDEPENDENT PNEUMATIC TOOL COMPANY



400 W. JACKSON BOULEVARD, CHICAGO 6, ILL.

Branches in Principal Cities

AMERICAN ARTISAN

Covering All Activities in Residential Air Conditioning and Small Commercial Cooling, Warm Air Heating, Sheet Metal Contracting and Fabricating

WITH WHICH ARE MERGED

FURNACES
SHEET METALS

AND

Warm-Air
Heating

J. D. Wilder, Editor

A. A. Kennedy, Assistant Editor

Vol. 113, No. 9 September, 1944 Founded 1880

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In This Issue

WITH the release of PR-23 in June, PR-24 in July and PR-25 in August, the three first steps to conversion from full war production proposed by WPB are now in operation.

Many business men believe these three steps are all business needs for complete conversion, but Arnold Kruckman, on page 50, describes the shortcomings of these measures and gives us a glimpse of some of the expectations and thinking of the men who must make these steps function and who can, if they choose, make the final results fall far short of the relief business needs to tide itself over the tough period which will follow reduction and cutbacks in war orders.

Supplementing Mr. Kruckman's Washington Letter, we publish most of the text of order PR-25. While PR-25 affects manufacturers primarily and directly, the order should also be studied by dealers so that they will understand and appreciate the problems and possible delays in attaining the ultimate goals envisioned.

During the past summer several hundred American Artisan readers took time out of their busy day and answered questions presented in an AA 8-page questionnaire. From their replies, nine studies of the heating equipment services offered by readers were presented in the June, July and August issues.

Beginning on page 61 of this issue, six additional studies will be presented showing dealers' opinions of the types of heating equipment which will be sold after the war.

The first two studies—on oil-burning and gas-burning equipment—are in this issue. These two studies show: (1) Complete furnace-burner units will be sold postwar over conversion burners in the ratio of at least 3 to 1. (2) That all fuels will be acceptable and popular. (3) That the pent-up demand for modern, more efficient equipment is great enough to keep the industry busy for two years, even if we have no new house construction.

SELL
HEATING
Economy
and SERVICE
NOW

Winter
Is Not

Far Away
Heating Systems
Should Be Put
In Order NOW!

There will be no "let-up" in the demand for fuel saving during the coming winter. And there will be even LESS fuel than was available last year.

This presents an attractive opportunity for Heating Engineers and Contractors to sell *early* reconditioning and repair of winter worn heating plants.

Next to your own skill and knowledge of heating problems, the best aid in this important service to your customers is the quality Asbestos Products offered by Sall Mountain Company.

Sal-Mo Asbestos Products are available for all types of fireproofing, and insulating needs. They include Asbestos and Aircell Papers, Millboards, #77 Ductboard, Supply Duct, Pipe Coverings, Furnace and Boiler Cements, Tank Jackets and many others.



AND. 2414-5

176 WEST ADAMS STREET
CHICAGO 3, ILLINOIS

FOR Quicker
SHAPING, GRINDING, POLISHING
USE SKILSAW
PORTABLE GRINDERS!



• SKILSAW PORTABLE GRINDERS deliver *top load speed*, even when the going is toughest. That's why they grind down beads, studs and fins faster . . . speed up shaping, buffing and polishing. They're quality-built throughout, with many superior features such as special ball-bearing inserts to absorb vibration and spindle thrust. That's why SKILSAW PORTABLE GRINDERS run smoother, cooler, and last longer.

You'll save time, money and manpower with SKILSAW PORTABLE GRINDERS on every finishing job. Ask your distributor to demonstrate SKILSAW PORTABLE GRINDERS on your own work.

SKILSAW, INC.

5033-43 Elston Avenue, Chicago 30, Illinois

Sales and Service Branches in All Principal Cities

SKILSAW  **TOOLS**

MAKE AMERICA'S HANDS MORE PRODUCTIVE



COAL - OIL STEEL GRAVITY AND FORCED AIR FURNACES

*From COAST to COAST the Best
dealers served by the Best Jobbers
are PROUDLY SHOWING Modern*

SYNCHROMATIC



FOR ITS
BEAUTY
SAFETY
ECONOMY
SIMPLICITY



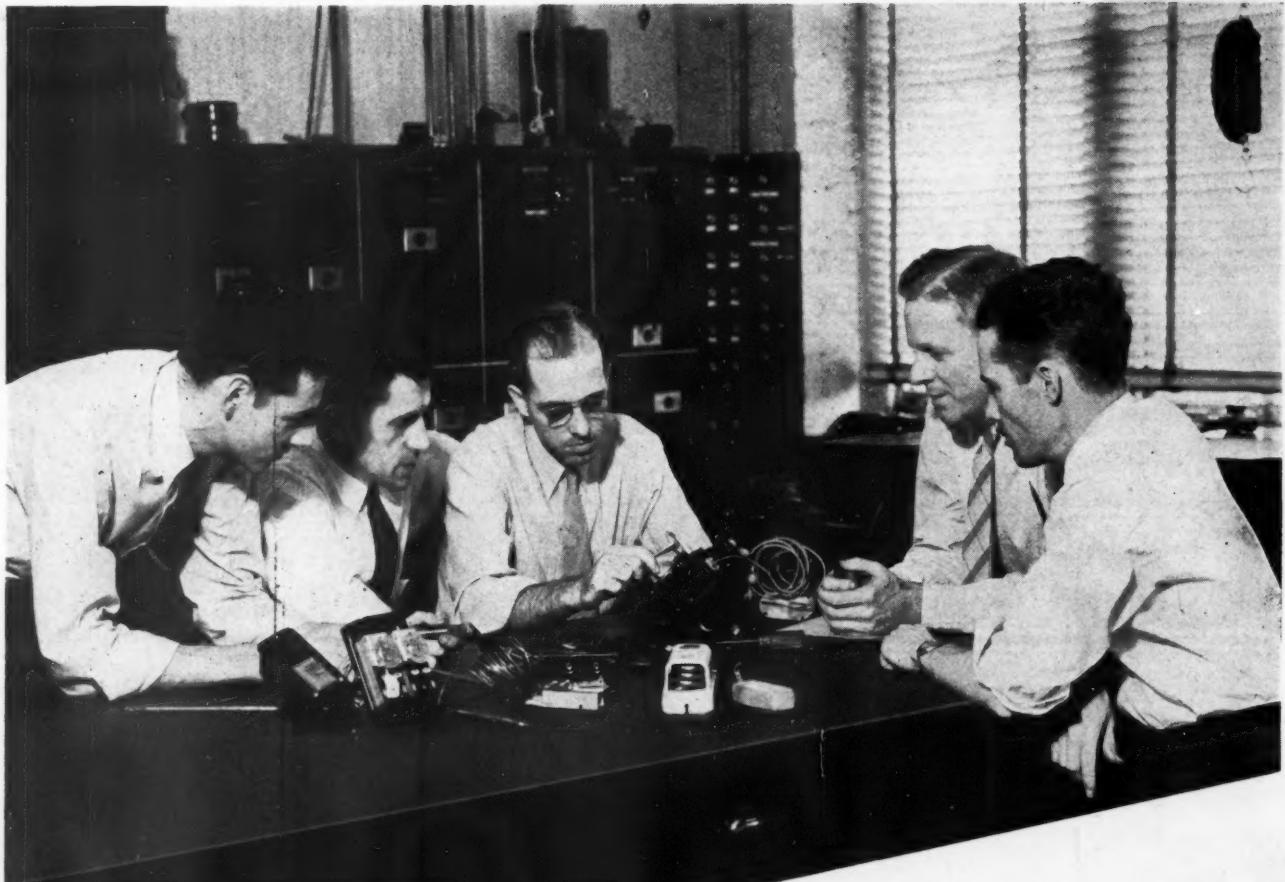
SEE YOUR JOBBER—get all the information on SYNCROMATIC—or write direct. Our representatives will give you the name and address of our nearest outlet.



FIVE SIZES...
A complete DeLuxe
Non-Premium Line on which to build your sales program.

SYNCHROMATIC CORPORATION

3373 NORTH HOLTON STREET • MILWAUKEE 12, WISCONSIN



8 EXCLUSIVE FEATURES OF WHITE-RODGERS HYDRAULIC-ACTION TEMPERATURE CONTROLS

1. May be mounted at any angle or position, above, below or on level with control point.
2. Hydraulic-Action Principle incorporating solid-liquid filled bulb and capillary provides expansion force comparable to that of a metal bar.
3. Diaphragm motion uniform per degree of temperature change.
4. Power of solid-liquid charge permits unusually sturdy switch construction resulting in positive contact closure.
5. Heavier, longer-wearing parts are possible because of unlimited power.
6. Dials are evenly and accurately calibrated over their entire range because of straight-line expansion.
7. Controls with remote bulb and capillary are not sensitive to change in room temperature. Accuracy of control is not affected by temperature changes in surrounding area.
8. Not affected by atmospheric pressure. Works accurately at sea level or in the stratosphere without compensation or adjustment.



THE PERFORMANCE YOU BUY BEGINS HERE!

In our Engineering laboratory — that's where White-Rodgers accuracy begins. Trained technicians are constantly developing new equipment and methods of control.

Their experiments, plus the many tests they conduct, result in the dependable performance you expect and get from White-Rodgers Controls.

To give your product the best in automatic temperature or pressure controls specify White-Rodgers.

*Fuel-Saving
Starts With
CONTROL*

WHITE-RODGERS
ELECTRIC CO.

1215J Cass Ave.

St. Louis, Mo.



Controls for Heating • Refrigeration • Air-Conditioning

VIKING'S POST WAR PLANNING FILE FOR DEALERS

FORCED AIR

CAN PUT MONEY IN Your Pocket!



HERE'S WHY YOU'LL PROFIT!

1. **THE MARKET IS TREMENDOUS**—Up to Pearl Harbor over 9 million gravity furnaces were in use in the United States. During the war many thousands of low priced homes have been built which normally would have used forced air systems but were restricted by priorities. These homes are all ripe prospects for you.

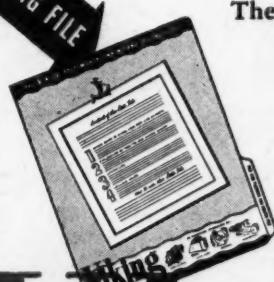
2. **THE VIKING BLOWER IS PROVEN EFFICIENT**—Superior engineering facilities have made Viking blowers the choice of America's greatest furnace manufacturers. A Viking Blower Package will convert any furnace installation into a modern winter air conditioning system to be adapted to any home.

3. **VIKING SALES HELPS MAKE SELLING EASY**—Dealer helps include literature and displays for the homeowner and for you that show what forced air heating is, how Viking Blowers operate and how to sell them.

See How We Train You Now At No Cost to BE A BLOWER DEALER!

● To help you get the profits you can get from Blower sales, we have started a special training course that you can enroll in at no cost to you. If you are interested, just write us a note that you saw this advertisement and would like to get the material we are offering. The Viking course in winter

air conditioning consists of regular mailings of educational material. This material will teach you what you should know about winter air conditioning, how to sell it and what to do now to line up post war business. Be prepared for peacetime markets. Grab this chance to get ready. You'll not be sorry.



GET BOTH FREE

We will send you this FREE Data File, chock-full of information to show you how you can make good money from Blower sales. Study it—keep it—use it—without obligation. Tells you the 17 things you can do now... today to help get post war business. Gives you selling helps, priority information, and literature to use now and later. And with it we will send our new 2-color house organ, the first in the industry to tell you how to sell Forced Air Heating, and to give you pertinent news about business conditions that will affect you. It describes how Dealers can learn now to make good money as Blower Dealers.

Viking

AIR CONDITIONING CORPORATION • 5600 Walworth Avenue • Cleveland 2, Ohio.

IN PEACETIME, PRODUCERS OF:



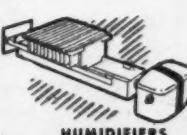
VENTILATORS



ATTIC FANS



BLOWERS



HUMIDIFIERS

There is STILL TIME



NO. 8873 SAMPSSEL COAL SAVING UNIT

Here is everything you need to make a complete installation on a hand-fired furnace. Everything you need is included. This package contains the Sampsel Damper Motor with built-in Transformer; Sampsel S-22 three wire, low voltage standard Thermostat; Sampsel Warm Air Limit Control; 33 feet of colored code conductor and all necessary chains, pulleys, staples, screws and hooks. Easy-to-follow instructions and diagrams are included. This is an outstanding value.

These Sampsel Coal Saving Package Units are ruggedly built and are easy to install. They will pay for themselves quickly and give years of dependable service. You will make friends—you will make money wherever you install Sampsel Controls.

Sampsel Time Control, Inc., Spring Valley, Ill.

Sampsel Time Control, Inc.
604 North Strong Avenue,
Spring Valley, Illinois.

Please enter our name for the following Sampsel equipment

No. 8873 Coal Saving Units
(with Limit Control)

No. 8870 Coal Saving Units

Send Catalog

COMPANY NAME

ADDRESS

INDIVIDUAL'S NAME

JOBBER'S NAME

There is still time to do a big volume of profitable business on Sampsel Coal Saving Controls before the season ends. Dealers throughout the country have learned that Sampsel dependability plus Sampsel's moderate prices mean volume sales, pleased customers and sound profits. There are hundreds of owners of hand-fired furnaces and boilers in your own neighborhood who can be sold Sampsel Coal Saving Controls—right now! If you haven't already done so, order your Sampsel Controls **TODAY!** Order from your jobber or direct from the factory and tell us your jobber's name.

Cooperate with the National Fuel Conservation program by installing Sampsel Controls on every possible hand-fired furnace or boiler in your territory.

Fuel Saving
Starts With
CONTROL

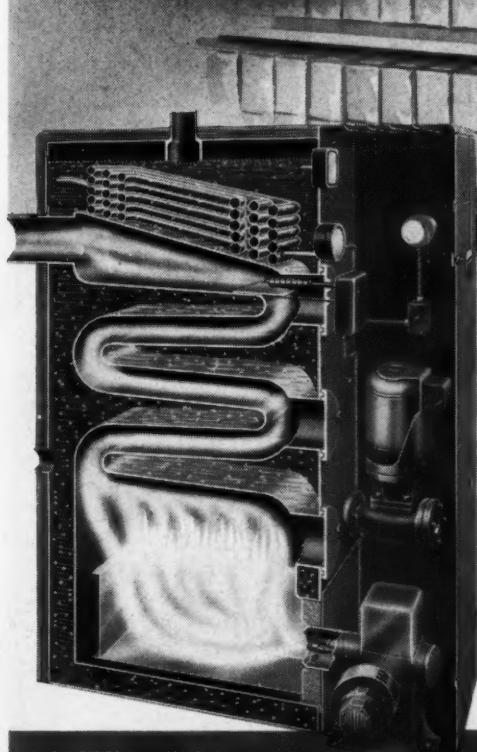


NO. 8870 SAMPSSEL COAL SAVING UNIT

The same as No. 8873 but without the Warm Air Limit Control. Application: hand-fired coal burning equipment for warm air, steam or hot water.

Sampsel
AUTOMATIC CONTROLS

**PENN has put profit in their
new PACKAGED HEATING UNITS...
It's like selling straight
over the counter...**



Every Penn Packaged Heating Unit is 100 per cent self contained and pre-fabricated at the factory. Every part and control is inter-related to work at peak efficiency . . . put together not by you in the customer's home but by expert factory assembly. Consequently, you sell one piece of packaged equipment, rated to a specific B.T.U. capacity. You receive this package from Penn crated in one box, and ready to pick up, set down and plug in. Competition wilts under the heat of this packaged sales "sizzle." Penn Packaged Heat is exclusive and patented. Want more details? Write for "The Story of Penn Packaged Heat," 30 Fruitville Road, Lancaster, Pa.

Gas or oil fired boiler-burner

Above is a cut-away section of the Penn gas or oil fired boiler-burner unit—shown just as it is delivered to you . . . ready to pick up, set down, and plug in.

A truly packaged unit . . . note how all parts and controls are self-contained within the extended steel metal methods (Penn methods patent No. 2,319,666) which is an integral part of the unit. No burner foundation necessary.

All parts and controls are inter-related at the factory to do the specific job of heat rating. Even the gas type burner is factory built-in; not just attached to the boiler.

Penn users get as much as 50% savings with the backward and forward air travel which provides quiet, uniform heat.

The stainless steel combustion chamber increases operating efficiency, reduces stack temperature, cuts down running time.

PENN BOILER & BURNER UNITS

SIZE (Water)	W-15	W-16	W-18	W-23	W-24	W-26	W-35
E.D.R. Rating, Sq. Ft.	500	680	848	1080	1450	1840	2960
Net Standing Rating	400	545	640	830	1120	1400	2240
Approx. Ship. Weight	750	850	900	1100	1450	1500	2000
Standard Tankless Coil, Gals. per Min.	3-1/3	3-1/3	3-1/3	5	5	5	5
Max. Tankless Recommended	3-1/3	3-1/3	5	6-2/3	6-2/3	6-2/3	6-2/3
Standard Tank Coil	44	44	44	66	66	66	66
Max. Tank Coil Recommended	66	66	66	120	120	200	300
Length Over All, Inches	40	40	40	46-1/2	52-1/2	52-1/2	66
Width Over All, Inches	20	20	20	22	26	26	32
Height Over All, Inches	48	48	48	54	56	56	68
Length Oil Burner Compartment	20-1/2	20-1/2	20-1/2	22-1/2	24"	24	26
Diameter Smoke Pipe	6"	6"	6"	8"	9"	9"	10"

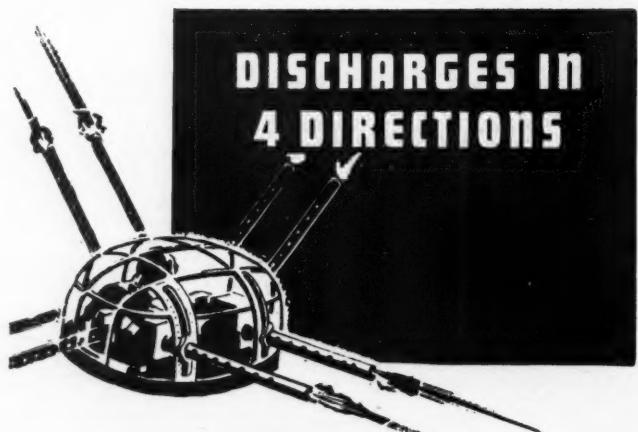
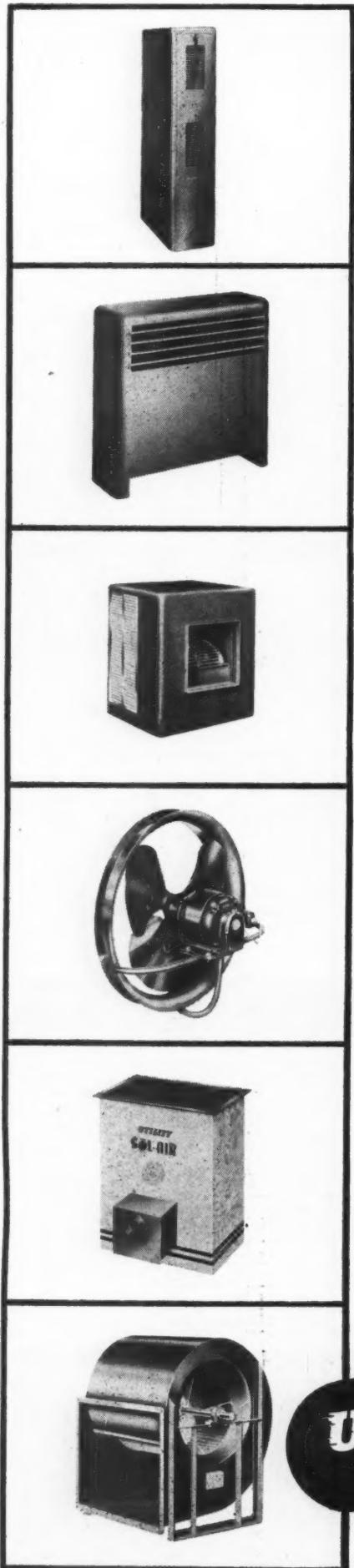
BOILER BURNER UNITS
AIR CONDITIONER UNITS

Packaged
by **PENN**

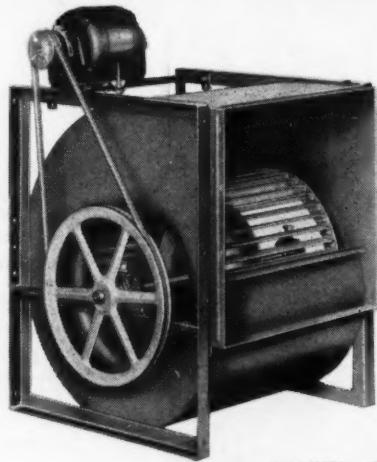
PENN-UN WATER HEATER
HYDRO-AIRE (Split System)

PENN BOILER and BURNER MANUFACTURING CORP.

LANCASTER, PENNSYLVANIA



NEW UTILITY STANDARD BLOWERS



The new Utility Standard Blower (Arrangement No. 3) can be installed with top vertical, top horizontal, bottom vertical or bottom horizontal discharge. Four-side angle iron frame makes blower more rigid, eliminates vibration and permits installation where blowers of heavier construction would normally be necessary.

Utility Centrifugal Blowers, Propeller Fans and Evaporative Air Coolers are available under WPB regulations. Complete information will be sent on request.

UTILITY FAN CORPORATION
4851 South Alameda, Los Angeles 11, California

Peace-time manufacturers of the Famous Utility Air Koolers, Blowers, Fans, Floor Furnaces, Circulating Heaters, Unit Heaters, Forced Air Furnaces.



SELL CONCO CLASS "A" STOKERS *Now!*

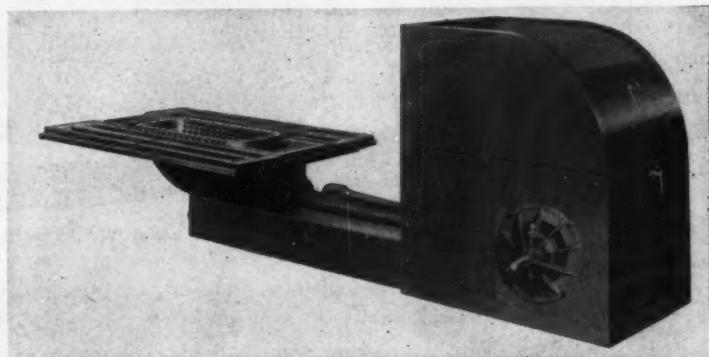
COAL-, OIL-, GAS-FIRED
Domestic & Commercial
Stokers, Steel Furnaces,
Winter Airconditioners,
Conversion Burners, Hot
Water Heaters, Blowers.



CONCO

DIVISION of *H. D. Conkey and Company* Mendota, Illinois

We are now building a limited number of Class "A" Stokers. Write today for full details on these units—a full range of models and sizes.



- Prompt L.C.L. shipments of Gastite furnaces.—Carload orders, approximately 60 days, subject to priorities.

WATERBURY

GASTITE FURNACE

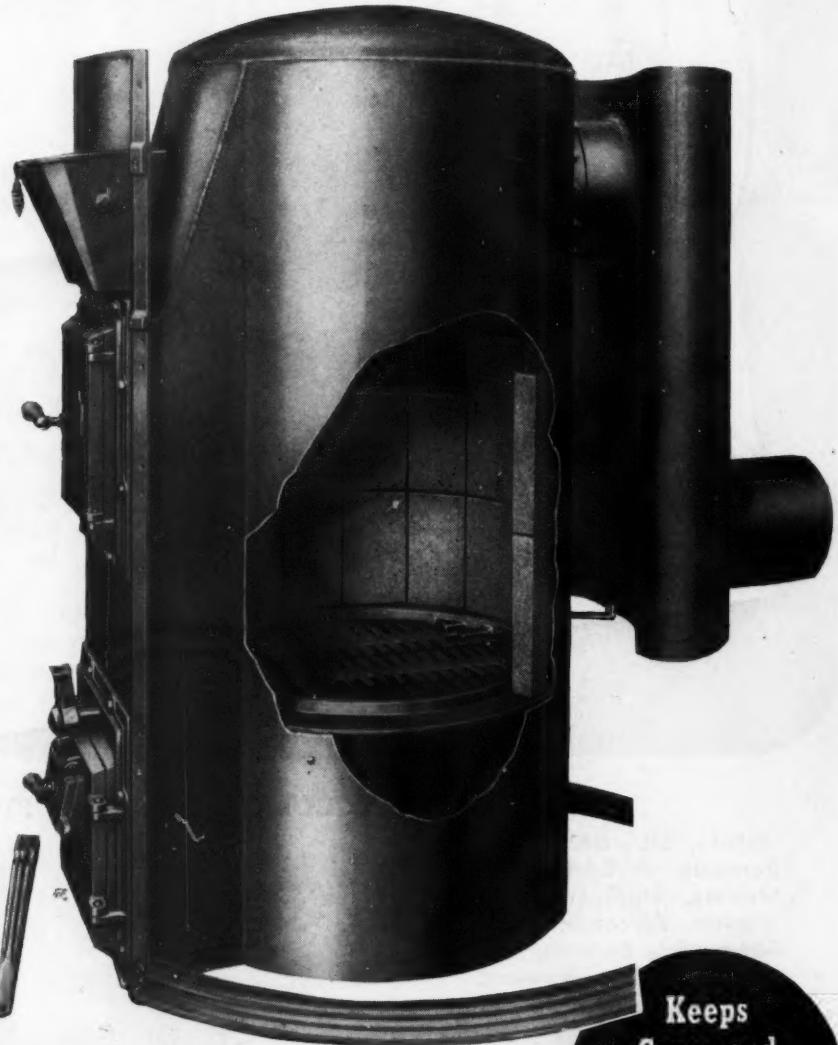
MODERATE IN PRICE—HIGH IN QUALITY

DISTRIBUTORS ATTENTION!

AN UNUSUAL OPPORTUNITY

During the war, we have executed several large contracts for various types of heating units for a number of departments of government. This has given us a capacity that enables us to carry out a long cherished desire—namely to place the distribution of our line in the hands of ambitious, aggressive distributors who will supply our products to the better-than-average dealer-contractors in territories not now occupied.

We have worked out a BUSINESS PROPOSITION, flexible enough to meet all practical requirements as to territory and organization—which you may find interesting. We invite your consideration, if you are so situated as to be able to make the most of a definitely unusual opportunity.



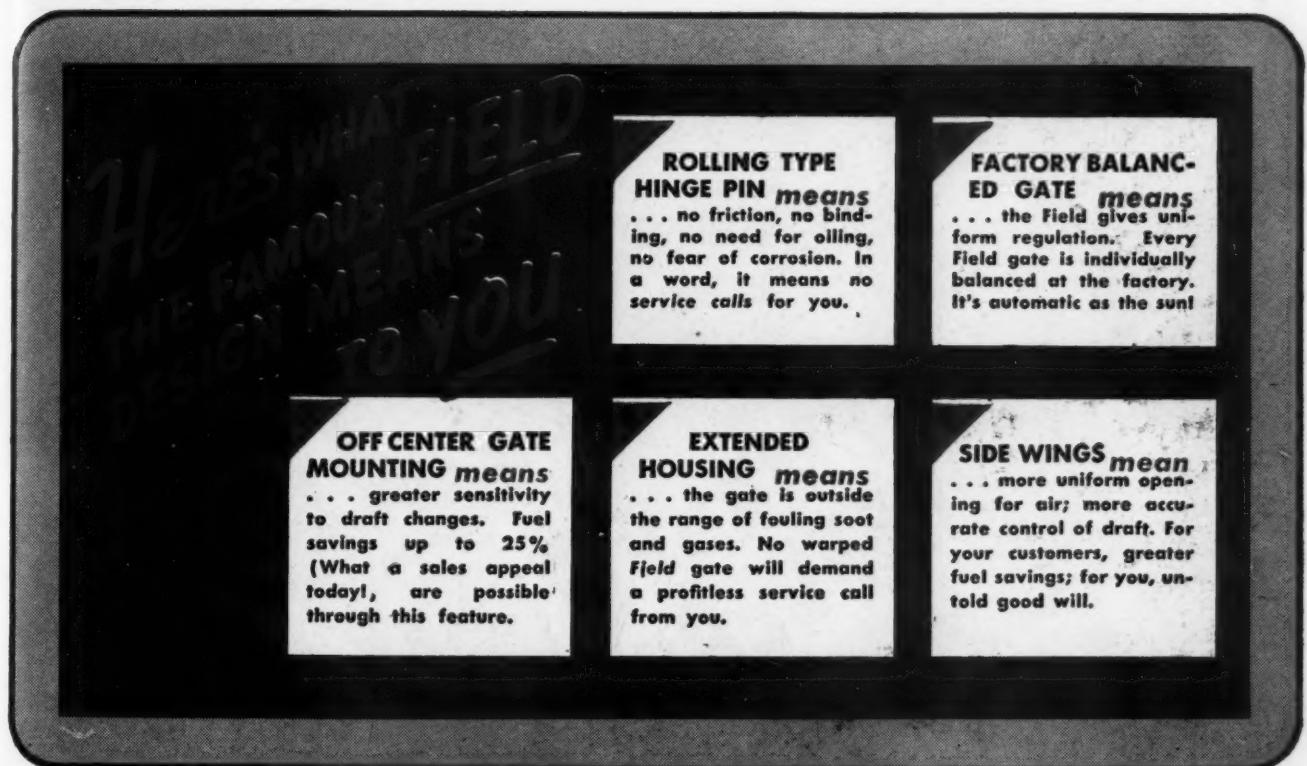
NOTE—Water-pan omitted under W.P.B. restrictions.

WATERBURY DEALERS. Our plans contemplate saving for you enough of our productive capacity to assure the prompt shipment of any of our standard furnace items required for essential replacement throughout the fall heating season.

Keeps
Gases and
Dust Out of the
Heat
Stream

THE WATERMAN-WATERBURY COMPANY

1122 Jackson St. N. E., Minneapolis, Minn.



Get behind the Fuel Conservation Program—Help Fuel Users save Fuel with a Field

**GATE BALANCED
AT FACTORY**

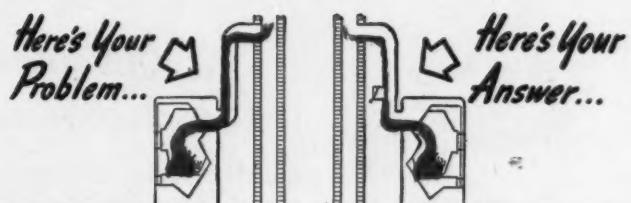
**DOESN'T COLD
OR WARP**

**QUICKLY
RESPONSIVE**



**MADE OF HEAVY
MATERIAL**
**ROLLING TYPE
HINGE PIN**

**FREE SMOKE
PASSAGE**



Above, a heating plant without a draft control. Excessive, uncontrolled chimney draft draws up 25% of the heat up the chimney. That means waste!

With a Field control (above) waste is ended. The Field allows only draft enough to carry the smoke up the chimney. Fuel savings range up to 25%!



CONTROL DIVISION of H. D. CONKEY & CO

MENDOTA, • ILLINOIS



WHEN?

● Some experts look for the war to end next month. Others, more conservative, say early next year. Frankly, we don't know and make no predictions. However, we are preparing for the BIG DAY when it comes and making plans for the big heating business that will follow soon after.

RYBOLT engineers have kept their sights trained on the important advances being developed in heating and air conditioning equipment. They have been planning and working ahead to get in production as soon as possible with the kind of equipment your customers will expect and demand.

The RYBOLT postwar line will be more complete and surprisingly better than ever before. Wait and see!

**BUY MORE
WAR BONDS!**



THE RYBOLT HEATER COMPANY
615 MILLER STREET



ASHLAND, OHIO

That's the Record of
HUSSEY COPPER
on the unique roof
of PITTSBURGH'S FAMOUS
KOPPERS BUILDING

15 YEARS...
AND NOT A SIGN
OF TROUBLE

FIFTEEN YEARS AGO, when the Koppers Building, Pittsburgh, was constructed, it was decided to combine distinctive beauty with durability in the roof. Accordingly, a straight ribbed design with unique herringbone diagonal ribs was chosen—and Hussey Copper was selected for the job.

During these 15 years, this Hussey Copper Roof has given unfailing performance—with not a sign of trouble—typical of Hussey Copper's dependability and durability.

KOPPERS BUILDING
Pittsburgh, Pa.
Roofing by Perritt Iron
and Roofing Company,
Pittsburgh, Pa.

HUSSEY

C. G. HUSSEY & COMPANY

(Division of Copper Range Co.)

ROLLING MILLS AND GENERAL OFFICES: PITTSBURGH, PA.

Warehouses in Principal Cities

I Like RUDY "Selling Features!"



EVEN FINER PRODUCTS FOR THE WORLD OF TOMORROW

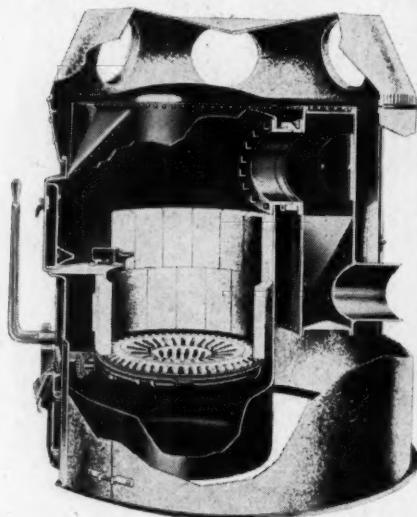


FURNACE COMPANY - DOWAGIAC, MICH.

"Yes sir, selling Rudy equipment is a great combination of pleasure and profit—and it takes less time and effort! I find that the name Rudy means quality to most prospects, thanks to the way Rudy owners boast about their furnaces—and with the advantage of a reputation like that, plus the exclusive selling features Rudy gives me to talk about, it doesn't take long to get the name on the dotted line."

DEALERS: It's true—Rudy has an enviable reputation for quality, ingenuity in design, engineering skill and selling features that make the Rudy agency of value to heating merchandisers. In selecting your post-war line, investigate Rudy advantages.

AVAILABLE NOW!



The new Rudy XM series steel coal gravity furnace is now ready—not a "Victory" model, but a fine welded and riveted steel furnace. True Rudy quality throughout. Send today for details on the XM series and Rudy's attractive discount policy.

Weirzin Specifications

"WEIRZIN SHEETS"

LIMITS
Max. .037 Min. .008
" 35 " 24 inches
" 72 " 18 inches
Gauge Weight: " 2 oz. " 1 oz. per sq. ft.
both sides

TOLERANCES

Same as cold rolled sheets.
To be established by mill on
advice of minimum and maxi-
mum sizes.

"WEIRZIN COILS"

LIMITS

TOLERANCES

Same as cold rolled sheets.
To be established by mill on
advice of minimum and maxi-
mum sizes.

Each electrolytic line is under the complete control of a
control desk . . . Loud speakers carry verbal instructions.

When a durable

Quality Control Laboratory—Weirton Steel Co.

Equipped for quality

The rigid uniformity of Weirzin quality is the result of the latest equipment and complete control from ore to sheet. The Weirton Laboratory, for instance, is equipped with the latest, most elaborate scientific and technical apparatus, including a fast, comprehensive check system. Samples are taken periodically from the building by pneumatic tubes and are run simultaneously by expert chemists, metallurgists, and engineers. Within a short interval their reports and instructions are telegraphed and two-way radio communication is established. Applying such findings to the product is an automatic process. Weirton's up-to-date manufacturing equipment and scientific practice make precision control not only possible but certain. There are in doubt about the application of Weirzin. These same Weirton facilities may be depended upon for individual, working information.

WEIRTON STEEL CO.
WEIRTON, W. VA.

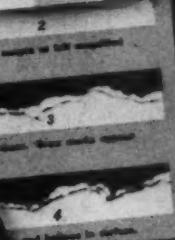
Weirzin

Electrolytic
zinc coated
sheets and strip

in all widths and gauges within
the limits of the Weirzin process

the secret of the Weirzin process is the
rigid control of uniformity of quality never
before attained in electrolytic zinc coated
sheets. An elaborate control system
samples in the laboratory keep the
attention of expert personnel at a
high pitch. It is highly recommended for
parks, marine, automotive accessories . . . hot-air
spools and reels . . . venetian blinds . . .
handled metal lath . . . corner
brackets . . . flexible hose and
hardware . . . fluorescent light
refrigerator cabinets . . . and
deep drawing with ease
and protection against corrosion.

Our sales men
will be glad to
show you the
many uses of
Weirzin.



Get your copy
OF THIS NEW BOOKLET

Just off the press—a booklet containing full information on an outstanding new product—WEIRZIN, Electrolytic Zinc-Coated Sheets and Strip. It's a practical guide in the fabrication of corrosion-resistant products where deep drawing or other severe forming operations are

involved. Describes also how Bonderized Weirzin solves many difficult painting problems . . . Weirzin electrolytic zinc-coated sheets and strip have resulted in substantial savings in scores of manufacturing plants . . . Write for this booklet; it may start you on a very profitable line of thought.

WEIRTON



STEEL CO.

WEIRTON, W. VA. Sales Offices in Principal Cities

Division of NATIONAL STEEL CORPORATION Executive Offices, Pittsburgh, Pa.



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H.

, 1944



...install DRAFTENDER Controls on hand-fired heating plants

Quick sales . . . a chance to boost the fuel-saving drive . . . and the customer satisfaction that spells future profits! You get them *all* with PENN Draftenders.

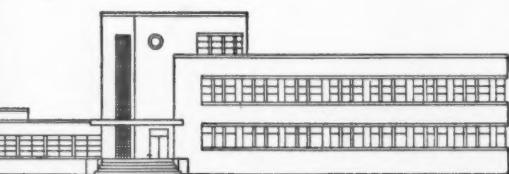
Customer satisfaction because these damper motors—in conjunction with Temtrol, PENN's heat-anticipating thermostat—enable owners of hand-fired heating plants to enjoy thermostatic control usually found only in automatic heating systems.

A chance to save fuel because Draftender Controls assure more economical firing, eliminate the waste of alternate chilling and overheating common with hand-controlled dampers.

Quick sales because Draftender is a welcome addition to *any* hand-fired system—whether warm air, steam or hot water. Installation is simple and fast. And remember this: Neither PENN Draftender nor PENN Temtrol requires consumer priorities.

That's the story . . . the field is yours. Order Draftender Control sets from your local wholesaler *today*. If you wish further information, ask for your free copy of Bulletin DM-100C. *Penn Electric Switch Co., Gosben, Ind.* Export Division: 13 E. 40th Street, New York 16, U. S. A. In Canada: Powerlite Devices, Ltd., Toronto, Ont.

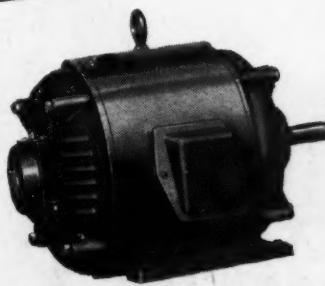
PENN



AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, ENGINES, PUMPS AND AIR COMPRESSORS

Fuel-Saving
Starts With
CONTROL



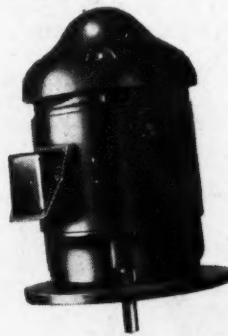
Smooth External Appearance—Type RS, 1½ HP, 1750 RPM, 110/220 volt, 60 cycle, Repulsion Start Induction, single phase, brush lifting motor.



Smooth External Appearance—Type RS motor, ½ HP, 1800 RPM, 110/220 volt, 60 cycle, Repulsion Start Induction, single phase, brush lifting motor. Smooth contour easily cleaned, blends well with the driven equipment.



Cushion Base—Type RS, for 1½, 2, and 3 HP sizes, eliminates the transmission of vibration from the motor to surrounding equipment.



Cover Protects Vital Parts—Vertical ball bearing motor showing cover and vertical mounting.

Insure

Satisfactory Performance

Of Refrigeration Compressors,
Stokers, Pumps, and Other
Hard-To-Start Loads

with

Century Repulsion Start —Induction Motors

Century Type RS, Repulsion Start Induction, Brush Lifting Motors provide the very desirable combination of high starting torque with low starting current.

No other type of single phase motor has such a small drain on the power line in proportion to the size of the load it will start and operate.

These characteristics keep light flicker to a minimum. In addition, these motors are quiet starting and operating, are unusually free from vibration, have a smooth, easy-to-clean frame.

The Century Type RS motors are only one example of the complete Century line of motors for heating and air conditioning use. A Century engineer can give you complete details on any of them, and help you select the correct Century motor for your applications. Call him in today.



CENTURY ELECTRIC CO.

1806 Pine Street, St. Louis 3, Mo.

Offices and Stock Points in Principal Cities

394



GOING THROUGH TO THE END OF THE LINE

Whether there is one passenger or fifty, the trolley car has to go through on its regular schedule to the end of the line. It can't wait until enough passengers gather at the stop to make the trip worth-while . . . it can't cancel the run if the car fails to fill up.

It is the same way with the jobbing business. We have to keep going through to the end of the line to give our customers service when they need it . . . regardless of how small the order may be or how difficult the assignment.

When orders are delivered incomplete, and this happens quite often in these times, we know it makes extra work for you. We sincerely wish this could be avoided, but in these days of rationed

materials our stocks of what the customer happens to need are sometimes completely exhausted.

In such cases we do our best to find out when the merchandise will be available and try to get it for the customer as soon as possible. This does take time . . . it may end in disappointment both to you and ourselves . . . but we want to do everything possible to work with our customers.

This spirit of wholehearted cooperation and service has been the guiding principle of the OSBORN organization for over 85 years. We pledge the continuance of this policy to the end that our customers can count on us always to do our best for them under all conditions.

THE J. M. & L. A.
OSBORN CO.
 CLEVELAND, OHIO
 BUFFALO • CINCINNATI • DETROIT
 Manufacturers—Distributors of Metals and Metal Products

PRIME METAL SHEETS • EAVES TROUGH • CONDUCTOR PIPE, ETC. • ROOFING • NAILS
 AND PAINTS • FURNACES AND ACCESSORIES • SHEET METAL TOOLS AND MACHINERY

A DEPENDABLE SOURCE OF SUPPLY FOR 85 YEARS



"EASY TO MAKE MONEY WITH WINKLER STOKERS"

... SAYS SUCCESSFUL NEBRASKA DISTRIBUTOR

L. J. Arkfeld writes: "From the start, we have sold Winkler Stokers in big annual volume and at a good profit. We credit our successful operation to properly setting up and organizing our business in accordance with Winkler methods of stoker merchandising . . . plus the fact that once a prospect is uncovered, Winkler exclusive features make it easy to close the deal."



1. The Winkler Basic Business Set-up starts you off right with the proper physical equipment for selling.

Profitable stoker merchandising begins with a good product! The second and equally important factor is proper training in how to sell that product in large volume and with maximum profit. *Winkler gives you both!*

Winkler Stokers have the features which make buyers out of prospects. They are the only stokers with *fully automatic* transmission—providing extra power and assuring longer life. You need only glance at a Winkler to see that it combines precision workmanship with rugged durability.

Supporting this excellence of product is the thorough training in Winkler selling methods which enables you to develop your profit opportunities to the fullest. Winkler distributors make money from the start because they are *shown how!*

Winkler Stoker merchandising—both today and after the war—offers liberal rewards. *Sign up now with a leader!*



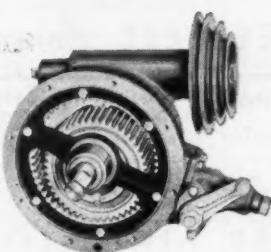
Winkler Model 7C Commercial Stoker



2. You and your organization are carefully trained in Winkler Retail Selling Processes which are consistently successful in closing the sale.



3. National advertising backed by your own individualized publicity program. Send for this booklet on the Winkler Two-for-One Advertising Bonus Plan.



EXTRA POWER FROM THE WINKLER FULLY AUTOMATIC TRANSMISSION

This exclusive and revolutionary design develops a smooth flow of tremendous energy—*extra power* to crush ordinary obstructions in the coal. No shear pin needed—the Winkler Automatic Safety Release protects against locked screw damage.

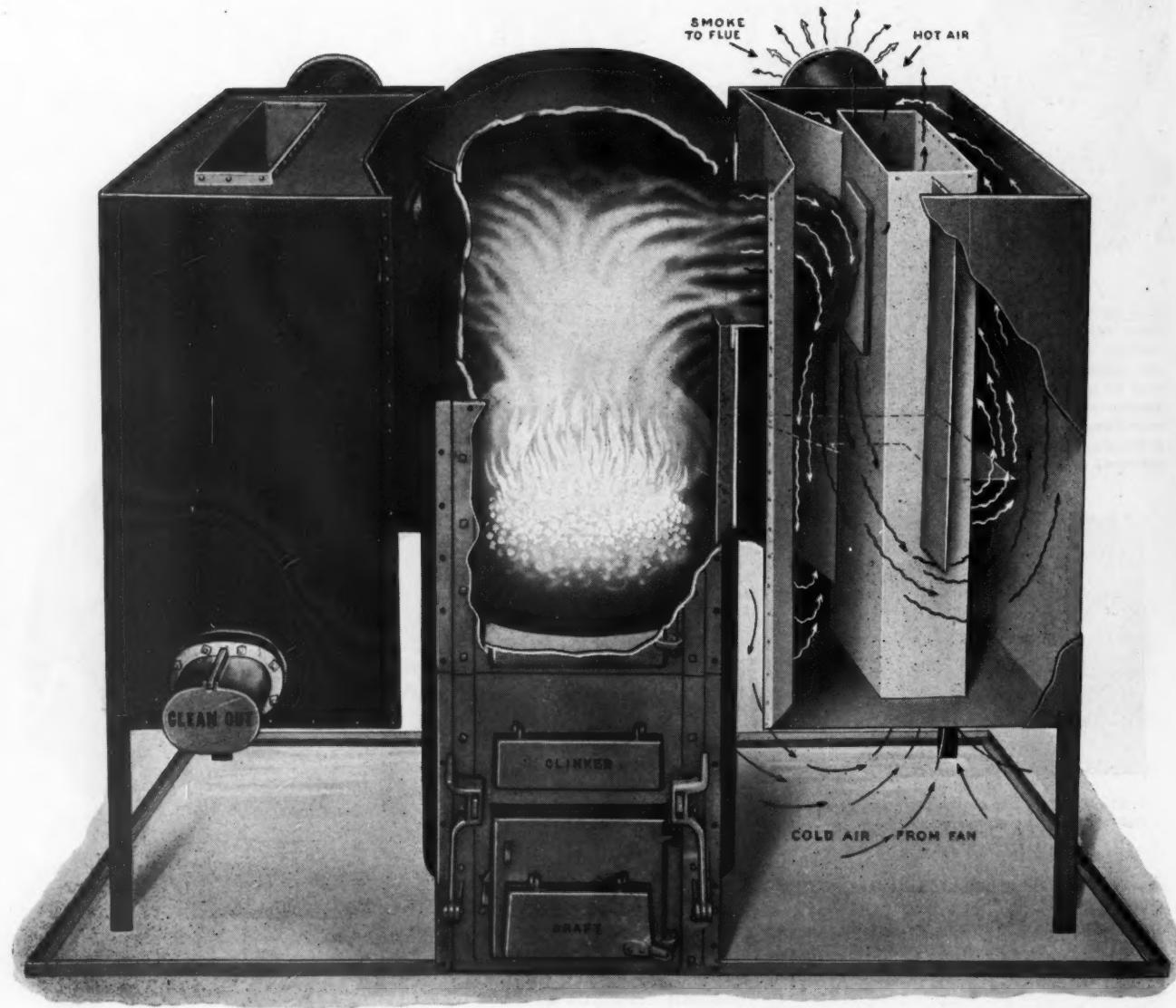
WINKLER

fully automatic STOKERS

U. S. MACHINE CORPORATION • LEBANON, INDIANA



PEERLESS Commander Heavy-Duty FURNACE



SPECIFICATIONS—PEERLESS Commander No. 750 DR

Diameter Drum (obround)	Height of Drum	Height of Radiator	Grate Area Sq. In. Sq. Ft.	Heating Surface Sq. In. Sq. Ft.	Ratio Heating Surface to Grate Area	Height to Bottom of Smoke Pipe Collar	Diameter Smoke Pipe	Casing Size	Casing Height	Shipping Weight—Lbs. Less Casing With Casing
31 1/2" x 48"	66"	46"	1048 Sq. In. 7.28 Sq. Ft.	30,959 Sq. In. 215 Sq. Ft.	29.55	49 1/2"	14"	91" x 58"	75"	3340 3855

FORCED AIR RATINGS

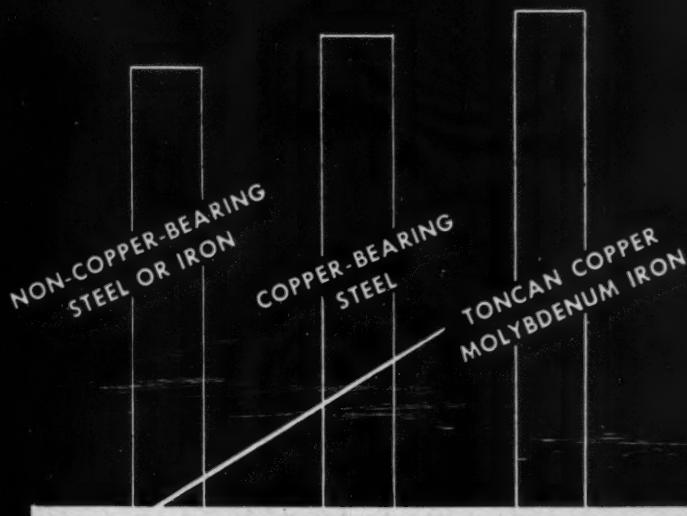
BTU-Coal	Firing Rate Lbs. Per Sq. Ft. Grate Surface	BTU	BTU-Coal	Firing Rate Lbs. Per Sq. Ft. Grate Surface	BTU
11,500	7.5 10.0	486,000 698,000	12,500	7.5 10.0	528,000 759,000
12,000	7.5 10.0	507,000 728,000	13,000	7.5 10.0	549,000 789,000

Specifications on other Peerless Heavy Duty furnaces on request.

Wire or Write for Descriptive Literature and Complete Information on other sizes of Peerless Warm Air Furnaces.

THE PEERLESS FOUNDRY COMPANY, Indianapolis, Ind.

Pioneers in Warm Air Heating for Over a Third of a Century



This chart is based on the Electromotive Force Series of Metals, the commonly-accepted, scientific demonstration of the relative "nobility" of various metals. Their nobility is measured by their ability to resist oxidation.



YOUR EXTRA MEASURE OF RUST-RESISTANCE IS OUT FOR THE DURATION!

But Toncan Iron will be back again to fight corrosion

Because the two vital war materials in Toncan Iron—copper and molybdenum—are needed to make fighting weapons pass their physical, you'll have to get by with a shorter measure of rust-resistance until after the war.

The copper and molybdenum in Toncan Iron are the reason why there's no other ferrous material like it for fighting rust. It is made from highly refined open hearth iron with which is *alloyed* at least *twice as much copper* as other ferrous metals—and *molybdenum* to assure thorough copper distribution.

Toncan's rust-resistance is uniform all through the metal—is practically unaffected by working processes and even the welds can be rust-resistant.

All this means longer service, lower yearly cost, satisfied customers.

Made from commercially-pure iron, Toncan Iron is highly ductile—fabricates easily and quickly. It is free from hard spots. You can figure fabricating costs closer—and the total will be less, too.

As good as Toncan Iron was, it will be even better the next time you buy it. We can promise that from our war experience with the new advance-

ments being made in ferrous materials. So, remember Toncan Iron's fighting qualities and what they can do for you. Better yet, get the booklet "How Toncan Iron makes Money for Sheet Metal Contractors and Fabricators." Ask your local Republic Toncan Iron Distributor or write us for a copy.

REPUBLIC STEEL CORPORATION GENERAL OFFICES • CLEVELAND 1, OHIO

Berger Manufacturing Division • Culvert Division
Niles Steel Products Division • Steel and Tubes Division
Union Drawn Steel Division • Truscon Steel Company
Export Department: Chrysler Building, New York 17, N.Y.



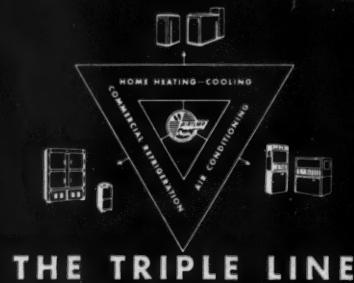
Republic
TONCAN COPPER
MOLYBDENUM **IRON**

Other Republic Products include Carbon, Alloy

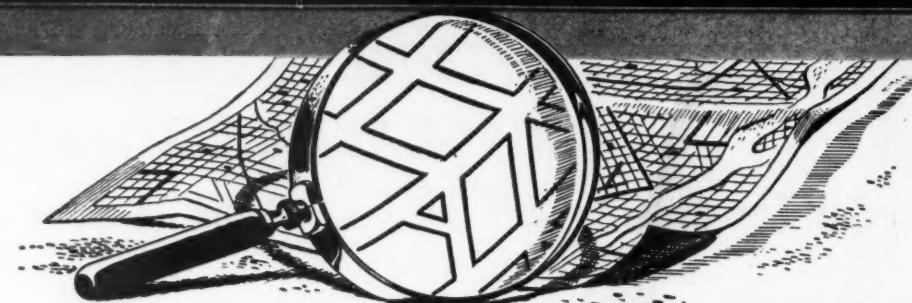
and Stainless Steels—Pipes, Sheets, Plates, Strip, Bars, Wire, Bolts and Nuts, Tubing

DEALER TERRITORY

The territory for Chrysler Airtemp dealers will be determined by the ability of a dealer to assure adequate coverage in contacting customers and prospects . . . systematically and effectively. The Chrysler Airtemp Triple Line will enable dealers to extract a greater business volume out of a territory and should assure 12 months profitable operation!



THE TRIPLE LINE



A MARKET FOR EVERY DEALER A DEALER FOR EVERY MARKET

Chrysler Airtemp has developed a postwar program based on the firm belief that superior products distributed through factory-trained dealers will assure a new high level of satisfaction for the public, the dealer and the factory.

With The Triple Line, Chrysler Airtemp offers a group of products that have a broad base market in every community . . . in homes—stores—offices—factories and public buildings. Chrysler Airtemp dealers, therefore, will have the opportunity to obtain above the average volume from any territory . . . with natural markets throughout each month in the year.

Dealer territories will be assigned to match the capacity

of the dealer on any of the three lines . . . to permit the maximum sales volume from a dealer's investment and manpower.

Direct dealer contracts will be available for just the Chrysler Airtemp heating line—or for heating in combination with air conditioning or commercial refrigeration—or for all three of these business-building lines. Airtemp Division of Chrysler Corporation, Dayton, Ohio. • In Canada, Therm-O-Rite Products, Limited

The Indoor Climate Institute is making the American Public Conscious of the Need for Greater Indoor Comfort and Health.

Next Month's Advertisement Will Be Devoted To Selling Year 'Round Air Conditioning

Buy More War Bonds! Tune in Major Bowes every Thursday, CBS., 9 p. m., E. W. T.

CHRYSLER AIRTEMP
HEATING • COOLING • REFRIGERATION



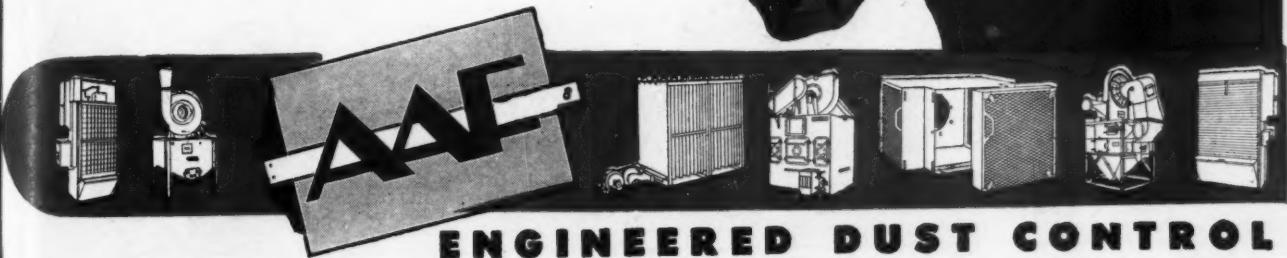


Your **Free** copy
will come by return mail!

For industrial ventilation and air conditioning, the Multi-Duty automatic self-cleaning filter holds maintenance to a minimum and insures a uniformly constant air supply. Engineering and installation data on the Multi-Duty is contained in Bulletin No. 241 A, shown here. Send for it without obligation.

AMERICAN AIR FILTER COMPANY, INC.

355 Central Avenue • Louisville 8, Kentucky
In Canada: Darling Bros., Ltd., Montreal, P. Q.



Experience

"Only so much do I
know as I have lived"

—Emerson

The experience gained in the manufacture of virtually 1,000,000 warm air furnaces and air conditioning units, for coal, gas, and oil, is incorporated in Luxaire heating equipment.

When complete production is resumed, after victory is assured, this invaluable experience will be embodied in Luxaire postwar models.

Luxaire

THE C. A. OLSEN MANUFACTURING CO., ELYRIA, OHIO

THE PRE-WAR LINE OF LUXAIRE WARM AIR HEATING
AND AIR CONDITIONING UNITS FOR COAL, GAS, OIL



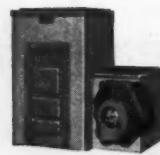
Series 600
Coal Fired
Steel Furnace



Series C
Coal Fired
Cast Furnace



Series 700
Coal Fired
Gravity Furnace



Series AC-700
Coal Fired Air
Conditioning Unit



Series A
Gas Fired Air
Conditioning Unit



Series G
Gas Fired
Gravity Unit



Series H
Gas Utility Air
Conditioning Unit



Series 8000
Oil Burning Air
Conditioning Unit



WORKABILITY THAT GETS THINGS DONE

The importance of workability in galvanized sheets has long been recognized by Continental and Superior metallurgists. They have worked to perfect a sheet for the man on the job. The result is new **SUPERIOR GALVANIZED**. This sheet forms quickly and easily. Its ability to withstand forming operations without flaking or peeling goes far beyond that of ordinary sheets. It solders well, handles well and possesses a high degree of uniformity. Use **SUPERIOR GALVANIZED** on one of your next jobs. Ask your jobber about future supplies of Continental and Superior galvanized sheets.

**CONTINENTAL STEEL CORP., KOKOMO, INDIANA
THE SUPERIOR SHEET STEEL CO., CANTON, OHIO**



SUPERIOR

CONTINENTAL STEEL CORPORATION

PROFIT NOW

ON NEXT SPRING'S HOUSECLEANING



Note

THESE OUTSTANDING POINTS OF SUPERIORITY

ECONOMY—Patented cellular design gives more filtering capacity per dollar.

FREE AIR FLOW—Uniform air distribution assures free flow with maximum filtering.

DUST CAPACITY—Thoroughly impregnated with a special compound to retain dust collecting ability indefinitely.

ODORLESS—Adhesive material is absolutely odorless and will not turn rancid.

LONG LIFE—Entire depth of filter used in cleaning, thus providing long and efficient filtering.

STRENGTH—Selected materials and sturdy construction prevent sagging. No danger of small particles being carried into air stream.

POLLEN—Highly effective in providing relief for persons allergic to air-borne pollen.

Start now to sell your customers and prospects the idea of avoiding most of the drudgery of next spring's housecleaning.

Detroit Air Filters do the housecleaning in the basement, during the winter, by cleaning and purifying the air before it gets into the house. Grime which would otherwise spread through the house, is caught by these efficient filters.

They're profitable—and you can sell them freely because they use no critical material.



An attractive envelope stuffer is available imprinted with your name. If you want some to send out to your customers, drop us a line on your letterhead.

DETROIT LUBRICATOR COMPANY

General Offices: DETROIT 8, MICHIGAN

Canadian Representatives—Railway and Engineering Specialties Ltd., Montreal, Toronto, Winnipeg

Division of AMERICAN RADIATOR & Standard Sanitary CORPORATION

"DL" Heating and Refrigeration Controls • Engine Safety Controls • Safety Float Valves and Oil Burner Accessories • Radiator Valves and Balancing Fittings • Arco-Detroit Air and Vent Valves • "Detroit" Expansion Valves and Refrigeration Accessories • Air Filters • Stationary and Locomotive Lubricators



CLOSE HARMONY



It takes two to harmonize... it takes two to make a partnership... **YOU** and **US**

We've been spending every "twenty-fifth hour of the day" working on our postwar partnership...

our postwar harmony. We've been concentrating on two things... policy and product.

But first we have asked you what you wanted in policy and product. From 29 states you told us in answering our questionnaire.

We're going to give you a complete line of warm-air pressed steel furnaces for all fuels... furnaces that need a minimum of installation expense and give a maximum of service.

And our policy is going to be in tune with **YOU**...

close harmony between manufacturer and outlet...

between **YOU** and **US**!

So keep your eye on the MOR-SUN emblem... it's the symbol

that'll set the tune for

CLOSE HARMONY

between **YOU** and **US**!

MORRISON STEEL PRODUCTS, Inc., Buffalo 7, N.Y.

"The Sun Never Sets with MOR-SUN!"



There are reasons why contractor alternate

THE other day we asked a contractor, "Jim, do you believe that contractors *really* prefer the 'base bid and alternate' type of specification to the 'or equal' type?"

"Yes they do," he replied. "You know we contractors as well as owners and architects prefer clean cut jobs. With an 'open' or 'or equal' specification the contractor is on a spot. He doesn't know which material or product to use in working up his bid. The architect may name one make and the contractor knows that make is acceptable but the minute the architect adds 'or equal' he indicates that some other make may be acceptable. Now the contractor will receive quotations on several makes other than the one which he is certain is acceptable. It is quite probable that one or more of these quotations will be lower. That means the contractor must gamble. He must either gamble that the lower priced product will be accepted as equal or that no other contractor will figure it as equal. If he figures on the lower priced make and the architect does not accept it as equal, the contractor loses money; while, if he doesn't figure on the lower priced make and another contractor does, he loses the contract."

"The 'flat' type of specification naming only one product or one material would eliminate that gamble, wouldn't it?" we suggested.

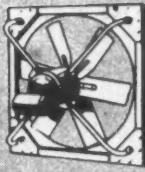
"Yes it would," he came back, "but we contractors appreciate that a 'flat' specification not only may allow an unscrupulous manufacturer to obtain an extravagant price but that it does not permit the contractor to offer alternate products which he may consider preferable because of price or quality. That's why the 'base bid and alternate' specification is best for owner, architect and contractor. The architect specifies a certain make of material or product and all contractors must base their bids on that make. Then the architect may ask for alternate bids showing additions or deductions for other makes which he and the owner may wish to consider, or the contractor may



THE HERMAN NELSON CORPORATION

Manufacturers of Quality Heating and Ventilating Products

GENERAL OFFICES: MOLINE, ILLINOIS • FACTORIES AT MOLINE AND CHICAGO, ILLINOIS



Herman Nelson
Autovent Direct Drive
Propeller Fans



Herman Nelson
Autovent Belt Drive
Propeller Fans



Herman Nelson hiJet
Vertical Shaft Propeller-Fan Type Heaters



Herman Nelson hiJet
Horizontal Shaft Propeller-Fan Type Heaters



or prefer the base bid and type of specifications

offer further alternates, if he so desires. The architect, engineer or owner decides before the contract is let what product will be used, taking into consideration any advantages in quality or price to be gained by using any of the alternates. This gives the owner what he wants at a price that is fair to the contractor."

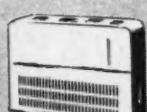
"Just one more thing, Jim," we said. "Some contractors say that it's too much trouble and work to prepare a bid with a lot of alternates. How about it?"

"Well," Jim replied with a smile, "it is a lot of work and the number of alternates should be kept to a minimum. However, don't forget that making substitutions on an 'or equal' specification can mean a lot of trouble and extra work. I've done it myself and it's a headache. First you have to obtain approval of the substitutes from the architects or owner. This can lead to a lot of controversy and resulting conferences. Then there are changes in construction made necessary by the substitutions. This means more conferences and complications. The first thing you know, you're way behind schedule and you've got to work overtime to complete your job on time."

"No sir!" Jim said as he walked away, "give me the 'base bid and alternate' specification to bid on and it will be a clean cut and profitable job after the contract is signed."

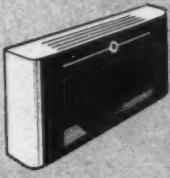
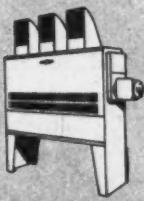


Herman Nelson
Autovent Direct Drive
Blowers



Herman Nelson Hijet
De Luxe Heaters

Herman Nelson Hijet
Blower-Fan Type
Heaters



Herman Nelson
Unit Ventilators



If you're figuring on climbing aboard the York Heat band-wagon, don't put it off! Full-scale production of York Heat is about to start, and, from a distributional standpoint, post-war is Now.

York Heat is ready to release to a waiting world the most complete line of domestic, commercial, and industrial oil-burning equipment the industry has ever offered. Every unit is tailor-made for a specific job. No phase of the market is by-passed.

PROSPERITY!

Production-wise, we are set to go. Promotion-wise, we are prepared with a hopperful of new ideas, which will give our distributors the drop on any competition.

A flexible, personalized plan of cooperative advertising, to fit each distributor's individual needs, adds sales-punch to expanded national consumer-advertising.

A unique, streamlined, non-recourse financing plan, which covers purchases of York Heat oil-burning equipment from factory to customer, with little need for capital investment by the distributor.

Get in on the ground-floor of the biggest boom-market you'll see in your lifetime. Line-up your future with an old-timer in the oil-burning field. Apply for a York Heat franchise today.



Every Bond brings victory nearer... buy an extra one today.

**YORK HEAT, Division of
YORK-SHIPLEY, Inc., YORK, PA.**

Gentlemen:

I'd like to go to town with York Heat, too. Rush me full particulars. I am interested in Domestic Heating Industrial Heating Both.

Name _____

Address _____

A-9



YORK HEAT

Division of YORK-SHIPLEY, Inc., York, Pa.

Member Oil Heat Institute of America

**POST-WAR MECHANICS WILL
WANT THESE WAR-TESTED**

Crestloy Pliers

Representative of the better tools which American industry and Mechanics will have post-war, is this improved Crestloy Diagonal Cutting Plier.

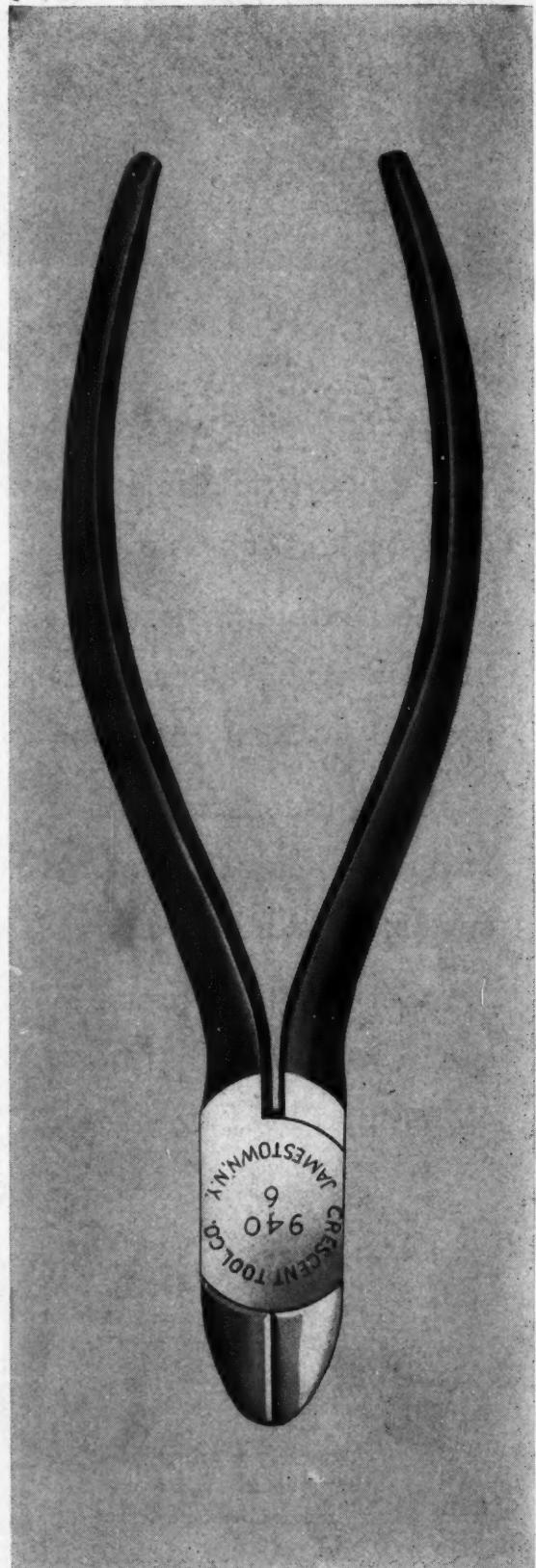
No. 940-6 was developed just prior to the war to meet the severe requirements of the Air Corps. It is a light-weight, heavy-duty cutter, with generous handle leverage and stubby nose, providing clean, easy cutting right at the cutter ends.

The experience we have gained in making millions of them has resulted in design perfection which normally would not be attained in many years of peace-time production.

Today the whole output of this improved tool must necessarily go to our *fighting mechanics*: tomorrow they will be available for mechanics everywhere.



CRESCENT TOOL COMPANY, JAMESTOWN, N.Y.





YEAR 'ROUND SALES and PROFITS from Viking year 'round climate control

The Viking line—extending from water heaters to central heating boilers—from floor furnaces and space heaters to year 'round air conditioning plants—has volume sales possibilities for each of the twelve months. You can build a hard-hitting prosperous and satisfied sales and installation organization when they are busy every day of every month making money for themselves and for you.

900,000 new homes plus twice as many modernization jobs will demand all kinds of indoor comfort

equipment. From summer-winter air conditioning jobs to simple space heaters or floor furnaces—Viking has them all!

Viking sells only through the Wholesale Distributor who carries a big share of your load—inventory, engineering and complete displays. This releases your facilities for the more profitable functions of your business—sales and installation. Mail coupon for catalog.



WHOLESALE DISTRIBUTORS:

Viking equipment is distributed only through wholesalers. If you can adequately serve the contractor dealers in your territory write now for our proposition.

VIKING



VIKING MFG. CORPORATION

1601 U. B. Bldg., Dayton 2, Ohio

Please send complete new catalog of Viking Heating and Cooling equipment.

Name _____

Firm Name _____

Address _____

Like an extra pair of
hands for furnace men

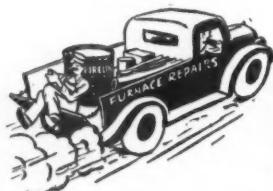
FIRELINE

FURNACE men who use Fireline have found it one of the most effective ways to stretch today's limited manpower. There's no need to dismantle the furnace; Fireline can be installed right through the furnace door. Just pound it in place, smooth off with a trowel, and the job is done.

It stands to reason that when you speed up your work, you speed up your profits. Each man can handle more jobs per day. And on each job you make a higher percentage of profit than you ever made installing new firepot castings.

The Fireline way to save time saves customers, too. You can get around to service more of today's ailing furnaces. A Fireline repair job costs your customer less to begin with, and from then on produces more heat from less fuel. It seals all cracks and holes in the casting; prevents escape of gas, odors, and dirt into the building.

Remember, too, that Fireline saves you the worry of waiting for new castings or repair parts, or special fire brick shapes for those steel furnaces. You can get all you want from your jobber, right now, without permits or priorities. Make that your final reason for cashing in with Fireline—this year and every year.



Keep a Drum on the Truck

Make every minute on the job count; avoid those unnecessary return trips to the shop. Keep a drum of Fireline on the truck, so you can go right to work on any job that turns up. Write for bulletins, prices, and name of nearest jobber.

Fireline Stove & Furnace Lining Co.

1816 Kingsbury St. (Dept. I), Chicago 14, Ill.

FIRELINE

STOVE & FURNACE
LINING



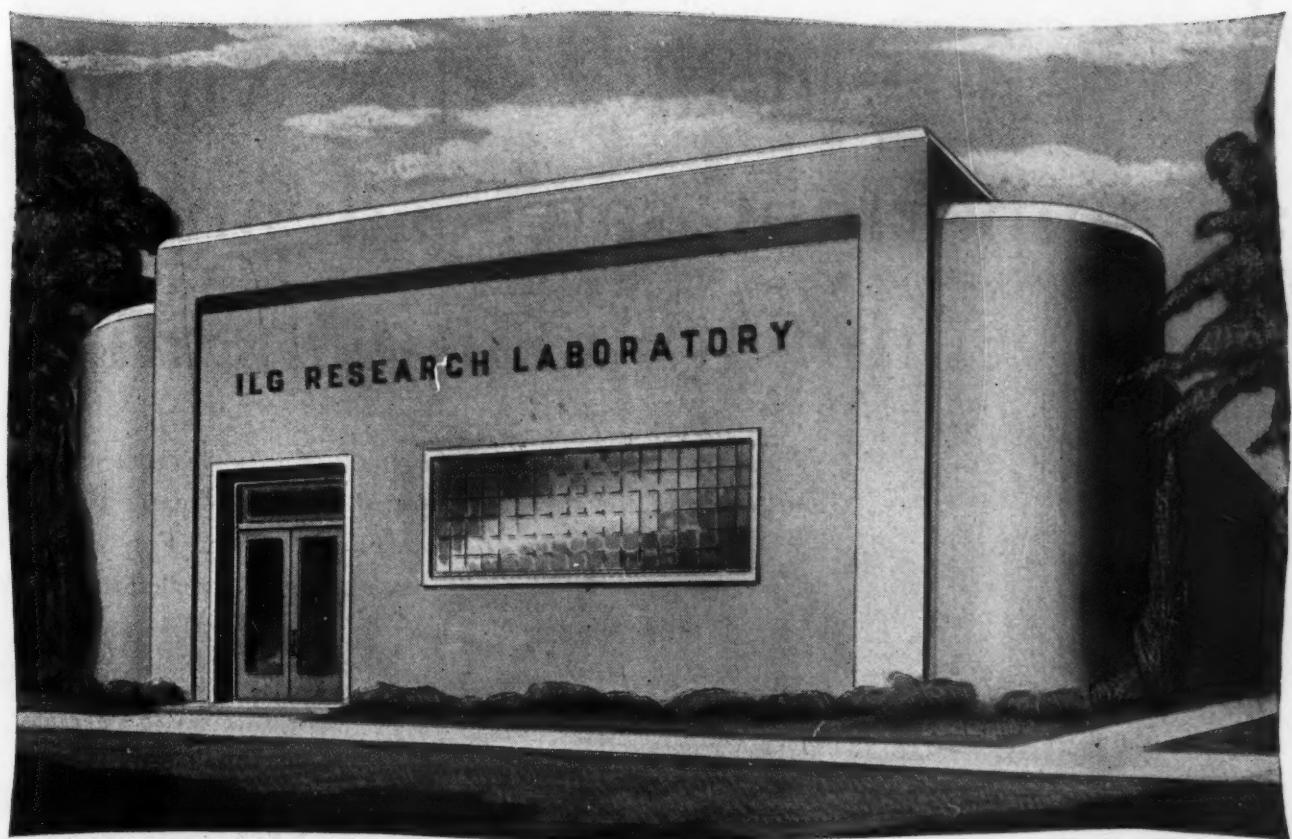
Two Other Products You Should Know



Iron Asbestos Furnace Cement—The high-quality cement for setting up new furnaces and re-cementing old ones. Withstands higher temperatures; will not crack, shrink, bloat or blister. Makes your work more permanent. (And your customers, too.) Prove its superiority on your next job.



Fire Hearth Castable Refractory—The ideal material for setting stokers and building oil burner combustion chambers. Just mix and pour; then trowel it smooth. Conforms to any shape. Air-setting. Does not shrink, crack, or crumble.



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heater experiments, to stimulate day and night, year-round research. And the expert staff has been completely divorced from production responsibilities to concentrate on scientific developments. You are urged to visit this new home of research... to use its complete and modern facilities in solving problems you may encounter in the conditioning and handling of air.



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Fully illustrated booklet pictures the plan, the building, the staff, the wide range of equipment in new ILG Research Laboratory. Phone nearby Branch Office (consult classified directory) or send coupon for your copy today.

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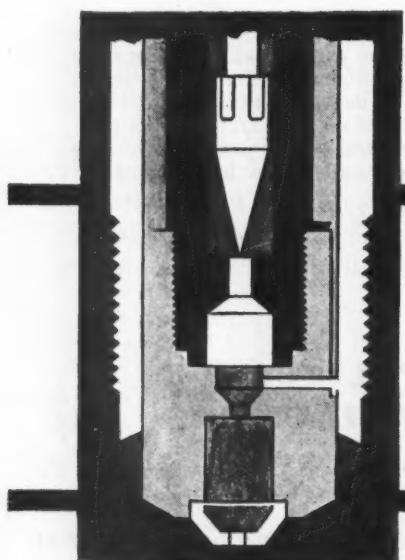
To G-E dealers this will be an important sales advantage in the coming boom in heating

When the race for business begins in the post-war heating market, look for the distributor of G-E Automatic Heating Equipment in the "next to rail" position. For out of General Electric's wartime research and experience will come an important, perhaps *decisive* sales advantage.

The features that made prewar G-E equipment easy to sell were products of the research laboratory. And *current* research is busily developing equally important—possibly revolutionary improvements—for the equipment of tomorrow.

What these improvements are cannot be announced just yet. But you may be sure that the G-E Automatic Heating Equipment to come will be quiet, compact, efficient, easy to install . . . and *easy to sell*. Now is the time to join the alert dealers who are already planning their tie-in with this profit-opportunity line. *General Electric Company, Heating Division, Section 4539, Bloomfield, New Jersey.*

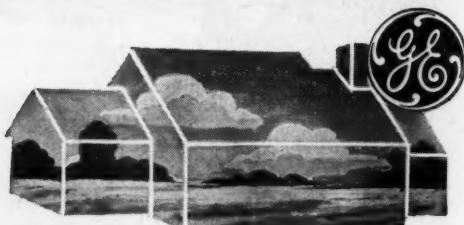
★ BUY . . . and hold . . . WAR BONDS ★



THE DOUBLE-MIX NOZZLE—an outstanding research development, identified with prewar G-E heating units, which provides amazingly fine atomization of fuel oil and assures clean, complete and efficient combustion. Out of today's research will come important new sales features to distinguish the General Electric heating equipment of tomorrow . . . and to offer new opportunities to its distributors.

Automatic Heating by
GENERAL ELECTRIC

Hear the General Electric Radio Programs: The "G-E ALL-GIRL ORCHESTRA," Sundays, 10 p.m., EWT, NBC... "THE WORLD TODAY" News, Every Weekday, 6:45 p.m., EWT, CBS



"CONTROLLED WEATHER"

FITTINGS THAT FIT by MONCRIEF

DIE STAMPED · MACHINE MADE!

CUTS INSTALLATION COSTS!

BEST BY INSTALLATION TEST!

MONCRIEF · WARM AIR
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SINCE 1895

THE HENRY FURNACE CO.
MEDINA, OHIO



To keep Your Customers Happy

with the
"indoor climate"
in their homes

...keep the air moving with the Mueller Season- Stat Heat Control

In mild weather, the Season-Stat assures that air is delivered at a relatively low temperature, with the *continuous movement* essential to comfort and health. . . . This exclusive Mueller control is an attractive instrument which may be located on the wall of any first-floor room. It shuts off the gas valve or oil burner, or operates the damper motor on a coal-fired unit, in accordance with the temperature of the circulated air which has been determined by the setting of the pointer on the Season-Stat. Thus long periods of air circulation are attained under any outdoor temperature conditions. . . . It pays to ask for as much of the building budget as is necessary to provide true Indoor Comfort — the Mueller way. Promote a Mueller system . . . made by a company with an 87-year record of heating progress . . . and selected from a complete line that includes furnaces and winter air conditioners for homes of every size, type, and price range (old or new) . . . specifically designed for the chosen fuel. . . . Write now for bulletins on Mueller equipment. . . . *L. J. Mueller Furnace Co., 2010 W. Oklahoma Ave., Milwaukee 7, Wisconsin.*

D-43

MUELLER *Climatrol*
HEATING AND WINTER AIR CONDITIONING



The Season-Stat is just one of the many features in the complete Mueller Line.



Gas Mueller equipment includes gas-fired winter air conditioners, gravity furnaces, and gas boilers.



Oil Just the right size and type for any home, in the complete Mueller oil-fired line.



Coal Complete selection of coal-fired winter air conditioners and gravity furnaces, including special stoker-fired model.



Mr. "Fixit", sheet metal worker, knows how to tell good sheets when he sees them

THE sheet metal specialist, whose artistry works wonders with steel, knows how much he depends on the quality and rightness of the sheets he uses.

Unless they are carefully finished, true to gauge, flat and ductile—uniform and dependable in every respect—his work is made harder and trouble may be encountered.

This explains more than anything else the increasing insistence on U·S·S Sheet Products, which carry the best known trademark in steel. For not only are they made in the

widest ranges available, but to specifications for each particular need. The U·S·S quality symbol is your assurance that the job will work out to your satisfaction.

Your customers know this as well as does your industry. Back of this trademark throughout town and country is the most intensive advertising program ever fostered for steel. The U·S·S label is a seal of approval on every product which bears it. It certainly increases customer satisfaction.

War needs have interrupted your



home-town operations. They have made it hard for us and for you to meet even urgent civilian demands. But the victory era, now clearly approaching, will work rapid changes in this picture. You will not only face the best prospect for work in your shop's history, but there will also be ample supplies of U·S·S Sheets of every kind to meet it.

U·S·S STEEL SHEETS

CARNEGIE-ILLINOIS STEEL CORPORATION, Pittsburgh and Chicago

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United States Steel Export Company, New York



UNITED STATES STEEL

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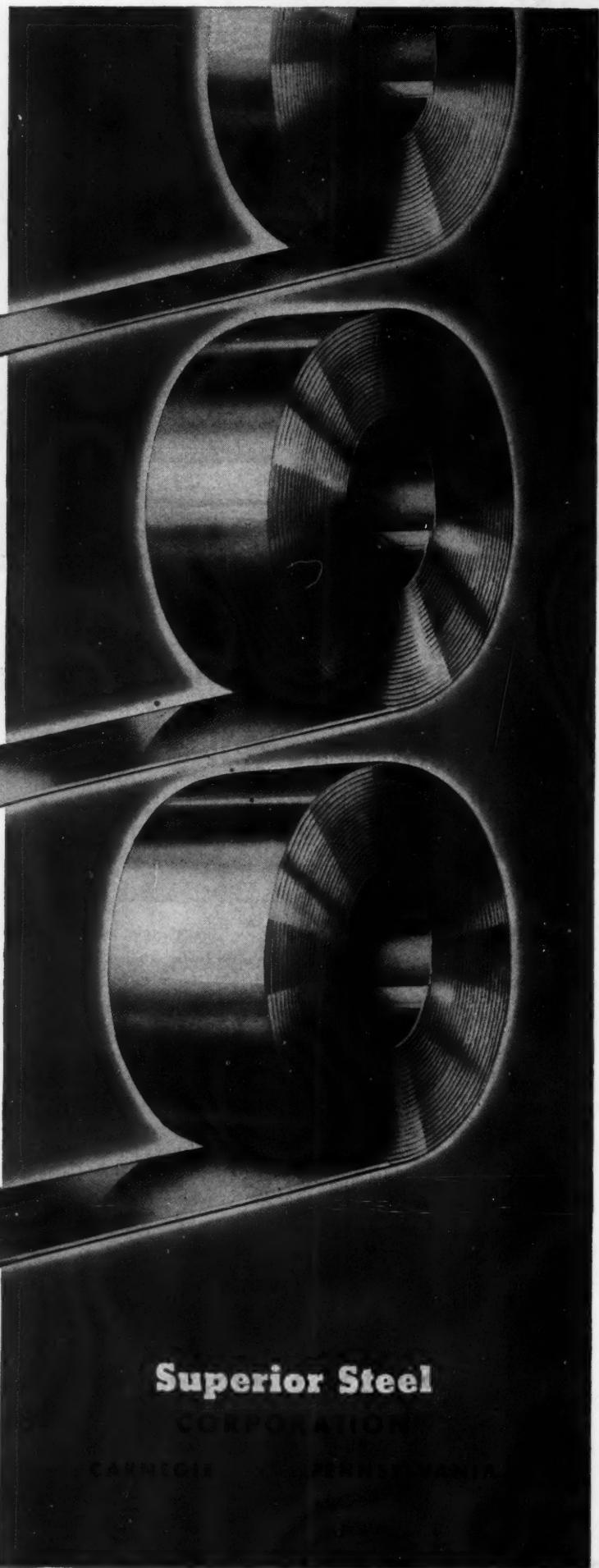
**Hot and Cold Rolled
Carbon and Alloy
Grades**

Stainless Grades:

High Tensile,
Heat Resisting, or
Drawing Quality
as required

The Name and the Products are

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"Since 1866"

Postwar Preview OF

WEIR-MEYER *Modern Heat*



- ★ A complete line of STEEL Furnaces and Air Conditioners for coal, gas, oil.
- ★ Air Conditioners with provisions for cooling in Summer.
- ★ Equipment incorporating a new principle of burning solid fuel.
- ★ Complete range of sizes and prices to fit every need.
- ★ Modern design to harmonize with Modern homes. Eye-appeal styling.
- ★ Basic, and many exclusive principles proved best and most practical in over three generations of experience.
- ★ Finest quality and workmanship that have given WEIR-MEYER leadership in the heating equipment field.

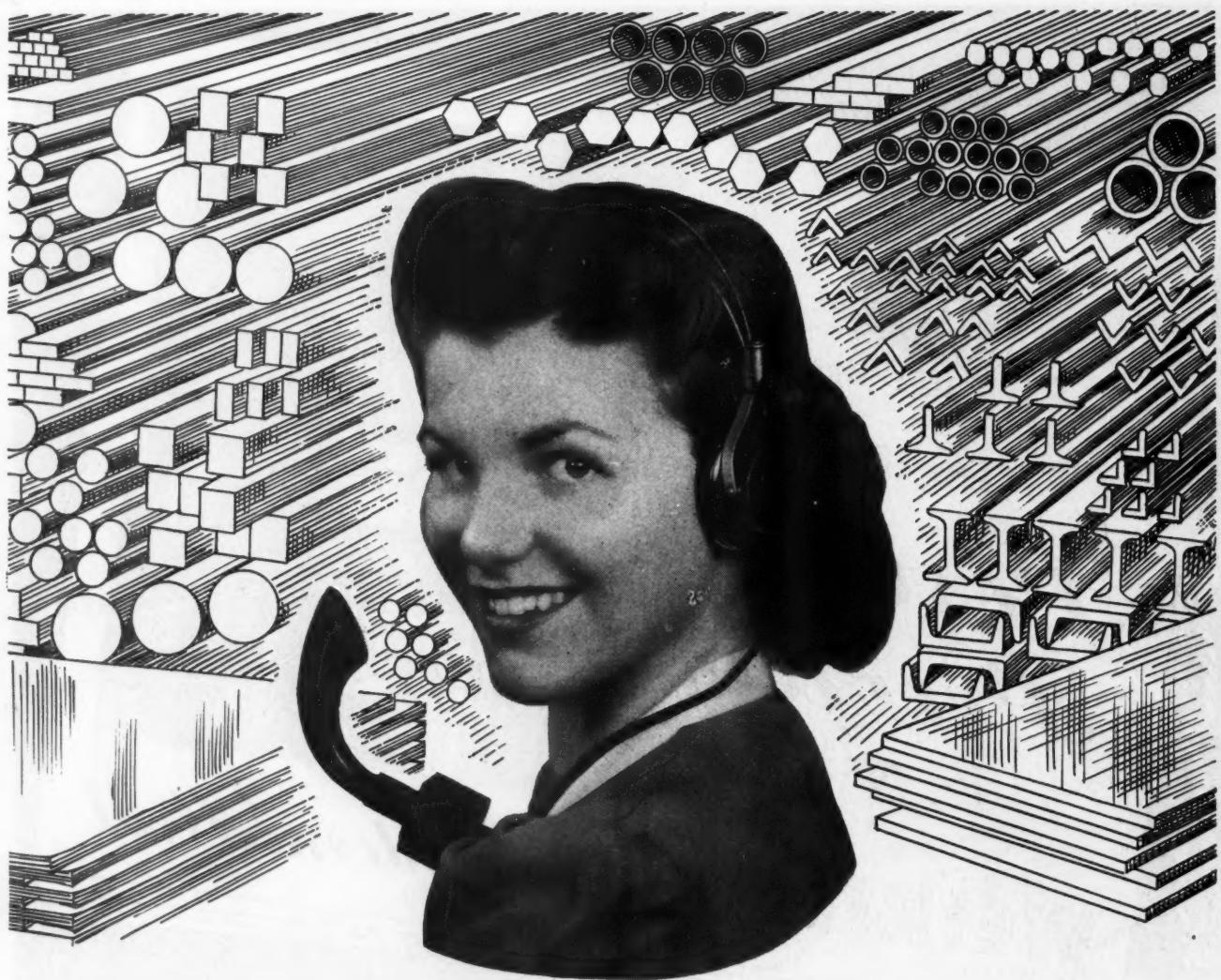


If you are truly interested in serving your community with heating equipment that will capture post-war markets and win enthusiastic customers, decide now to sell WEIR-MEYER Modern Heat. Inquiries solicited.

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MEYER FURNACE

COMPANY
manufacturers of
WEIR and MEYER FURNACES—AIR CONDITIONERS
FOR
COAL-OIL-GAS
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WEIR-MEYER MEANS *Modern Heat*



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Every type of steel from stainless to structurals is immediately available from Ryerson stock. Just reach for the phone and call any one of the eleven conveniently-located Ryerson service plants. Our operators will connect you at once with an experienced

service man who will see that you get the steel you need—when you need it.

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Steel Service Plants: Chicago, Milwaukee, Detroit, St. Louis, Cincinnati, Cleveland, Pittsburgh, Philadelphia, Buffalo, New York, Boston.

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RESIDENTIAL AIR CONDITIONING • WARM AIR HEATING • SHEET METAL CONTRACTING

FHA's Tenth Anniversary—1934-1944

IN THE issue of July, 1934, AMERICAN ARTISAN, in an editorial, said in speaking of the announcement of HOLC, FHA, NHA, "this legislation should be of vital interest to every contractor because the intent of these laws is to stimulate repair, remodeling, new construction; to loosen credit and generally bring about work for the building industry."

In October, 1944, issue, after the details of the operation had been worked out and clarified, in an article, "Let's Go with FHA," AMERICAN ARTISAN said, "So far as the construction industry as the nation's second largest industry, or our own part of that industry is concerned, FHA represents the first real attempt to revive building, put millions of building mechanics back to work, and at the same time provide home owners with a soundly conceived method of paying for sorely needed repairs. Detailed study of the Federal Housing Act should bring the conviction that this act is soundly conceived, is not based upon free gifts of money from the Federal treasury and, above all, meets a real need at the real sore spot of this depression."

This year, 1944, FHA celebrates its tenth anniversary. AMERICAN ARTISAN is pleased to offer in recognition the front cover as a reminder to our industry that FHA has been a major help and a major influence through ten years of more than usual business heartache.

That FHA was, as AMERICAN ARTISAN said in 1934, "soundly conceived," every business man in this industry no doubt will agree. Under Title 2 (home mortgages), 1,055,000 with a total value of \$4,600,000 were insured under the FHA plan in the first nine years and six months. Under Title 6 (war housing) 236,000 housing units with a value of \$1,038,000,000 offered for sale plus 31,264 units with a value of \$137,000,000 for rent were built to assist the war effort. Under Title 1 (property repairs and improvements), and the part of the act which took the construction industry out of the depression, 4,639,000 loans for an amount of \$1,850,000,000 were made in the nine year and six months' period.

That record, we believe, needs no further commendation.

There is another side to FHA's activities which, in the main and under peacetime conditions, has been beneficial. This is the establishment of standards

applicable to dwelling properties. A common ground of understanding for the mortgagees, the builder and the FHA was reached under "Property Standards" and "Minimum Construction Requirements," below which properties are considered ineligible for mortgage insurance.

In ten years' time, FHA has established several standards for heating systems. A commercial standard has been developed for mechanical draft oil burners. Other standards are in operation for oil-burning space heaters; oil-burning floor heaters; gas floor furnaces; warm air furnaces with vaporizing oil burners; domestic burners for anthracite coal. And, working with industry, there are standards for rating steel boilers and revisions to the gravity and forced air codes.

These "standards," although sometimes irksome, have, in the main, been beneficial. With the standards in force and in use for peacetime construction this industry has had no quarrel. These standards have made it possible for the legitimate contractor to offer his prospect or his customer a heating system which possesses the design and installation characteristics we know are necessary. It has largely removed the competition of the "fly-by-night" who does not want to install an adequate heating plant and the competition of the ignorant contractor who doesn't know and doesn't care if his system will function satisfactorily after he gets his money.

This record also needs no further commendation.

As for FHA's future, AMERICAN ARTISAN believes that FHA should continue. FHA has cost taxpayers not one cent. FHA has paid its own way—the only Federal agency we know of which has. Because only one-half of the communities in the United States having a population of 2,500 or more have building codes, it would seem desirable to have some central agency which does establish "standards" of minimum design and construction to protect the legitimate contractor. And, finally, because there seems much likelihood that post-war the heating industry will be flooded with "improved," "spectacular" heating and air conditioning equipment, we need some balance wheel which we can turn to when the going gets too rough for individual contractors or even whole groups of installers and manufacturers.

So to FHA—our salute.

Costing Method for "Service" Sales

By Arthur Roberts

REPAIRS and service do not usually involve the costing detail necessary with installations. Many of these jobs are for small sums, others are part of a yearly contract service for the maintenance of oil burners, stokers, etc., and other service is given under a guarantee of free service for a period. Regardless of whether the contractor gets paid for a service or not, he should "cost" it.

A majority of service jobs are sold at flat prices, such as \$3 for a service call on a burner, \$10 for cleaning a furnace, etc. However, such jobs can be sold the same as installations: (1) Cost plus, or (2) selling price based on estimate of time, materials, overhead and net profit, or (3) flat price without estimate.

Job Record Sheet and Envelope

Forms 1 and 2 are the recording gadgets that will help you earn service profits. Form 1 is the Service Record Sheet to be filled out for each job. Compute costs after job is completed and serviceman fills in

Job Service Record Sheet		
Name	Phone	
Address	Job No.	
Service wanted _____		
Cash \$ _____ Charge \$ _____ Cont. # _____ NC. _____ FSG. _____		
Description of work done		
Materials used		
Materials returned		
Cost		
Labor hours-----From _____ To _____ Rate _____		
Mileage-----From _____ To _____ Mileage _____		
Miscellaneous expense _____		
Date	Signed	(Serviceman)

Form 1

Place selling price of job beside Cash, Charge or Contract. FSG stands for free service guarantee. This form serves as its own materials requisition sheet. List unusual expense or any expense not materials and labor beside "Miscellaneous expense." Usually such outlays are backed by petty cash slips or checks. You may make this form in duplicate if you wish to retain one copy in the office as a check on serviceman. The back of this sheet may be used for recording any information necessary to adequate cost control.

particulars. This form serves four purposes: order sheet; work sheet for the serviceman; cost record; and billing copy on charge sales. Service record sheets are filed each month in Service Envelope (Form 2), on the face of which the jobs enclosed are summarized for sales, labor, materials, mileage and labor hours. The monthly summary also shows margin of profit, overhead allotted to the service department, and net profit. If results are off the beam, check back. Here's how.

Start with the overhead percentage chargeable to the shop. If you have a showroom and sell merchandise over the counter, this is a separate department, which should be charged with its proper share of overhead expense. Say the shop overhead is 30 per cent of sales. Check each service job against this percentage. Say you charged \$10 for servicing a burner, which called for \$1 in materials and 6 labor hours at \$1 an hour cost to you.

30 per cent of \$10 selling price is.....\$ 3.00
Materials used 1.00
Labor—6 hours at \$1 an hour wage cost..... 6.00

Total cost of job.....\$10.00
Selling price 10.00

Profit or loss on job.....\$ 0.00

You just break even on this job. By analyzing all jobs in this way, you can trace profit or loss to source. If analysis shows that many jobs have been done at too low a net profit or a loss, then try to cut overhead, get greater efficiency out of your servicemen through the use of better equipment, etc., or increase prices. By checking the time spent on service jobs, you can get a good idea of the average time required to do the work and gear your future selling prices accordingly. An analysis similar to the foregoing will

Job Service Envelope		
Month of _____	Year _____	
Sales for month-----\$		
Cost of labor-----\$		
Cost of materials-----\$		
Prime cost-----\$		
Margin of profit on service sales-----\$		
Overhead charged to service department-----\$		
Net profit on service sales-----\$		
Labor hours charged to jobs _____ Rate _____ Labor Cost-----\$		
Payroll expense of service department-----\$		
Non-productive labor-----\$		
Mileage for month _____ Truck cost per mile _____ Truck expense _____		

Form 2

Enclose all service record sheets for month in one job envelope and on its face summarize monthly results.

Job No.	Name	Address	Type Job	Selling price	Profit	Loss
Total-----						

Recap

Type job	Sales	Profit	Loss

Form 3

This form is columnarized to record only flat price service jobs. If you estimate a service job on the time and materials basis, list it with an encircled E to identify it as such.

disclose the "weak sister" service that is being carried by other profitable services. Sometimes an unusual condition will compel a serviceman to spend a longer-than-usual time on a job. In such a case, have him write an explanation under "Remarks" on the reverse side of this form. By means of this form, the contractor may set up standard costs on the different type services so that he can price profitably, not only on time and material estimates, but on flat price sales. Without a backlog of such experience figures, the contractor works in the dark.

If you pay straight salaries to servicemen, the labor hours total will tell you if they made each hour productive. If you sold their labor for less than you paid, the difference is non-productive labor, probably spent cleaning up the shop, maybe just plain loafing. Keep down non-productive time to minimum if you want maximum profits. Form 2 helps you keep track of it.

If costs increase, the summary will disclose this fact, so that you can make upward adjustments in service prices or take other steps to remedy matters. By means of the monthly summary on the service envelope, you are always working on current service costs, which is important from now on because costs will be unstable for some time to come, extending well into the postwar period when many adjustments in general business conditions will keep costs in a continual flux. This applies to merchandise costs as well as service costs.

You have the same problem in costing service whether you estimate time, materials, overhead and net profit on each job individually or sell at flat prices, that of setting a price in advance of the sale and computing costs after the sale to determine profit. The results are then analyzed to serve as a basis for computing future prices. Unless you analyze your costs and use them as experience figures to guide you in setting future selling prices, you are not doing a good costing job.

Those contractors who wish to detail their service

costs should fill out Form 3 showing the monthly detail of service profit or loss. Total the profit or loss for the month and enclose Form 3 in the service envelope or file in a looseleaf binder. The total on this form should agree with the total profit or loss shown on the service envelope summary. This form gives a bird's eye picture of the comparative profitability of different jobs or different type services. Often a contractor loses money on one form of service and makes an excellent profit on another, the same as on merchandise lines. This form will help you equalize profits and eliminate "weak-sister" services or take action that will make them profitable. At the bottom of this form, after totaling results for the month, you may recap the figures to show a profit or loss per service.

Inspection Card

On service contracts, some contractors attach an inspection card near the heating plant (Form 4). The serviceman enters his name and date after each inspection so that the customer can always check on inspection periods. This minimizes oversight in the service department. A method should be devised to keep track of inspections in the office through some sort of a tickler system. Free service calls should be costed and their cost placed under overhead expense to record the trend of this item and amount.

The mileage recorded is supplementary information for comparative study. This expense is already figured under overhead. If the service department operates its own truck for service work only, enter the total mileage for the month, get the truck cost per mile by dividing this mileage into the truck expense. If the service department shares a truck with the installation department, the mileage on service calls should be recorded on the job service records,

(Continued on Page 129)

Inspection Card

Month	Date of inspection	Name of serviceman
Jan.		
Feb.		
Mar.		
Apr.		
May		
June		
July		
Aug.		
Sept.		
Oct.		
Nov.		
Dec.		

The last date on card was your last inspection.
Call office if your
inspections are not up to date

Please watch water in boiler and oil in tank

Form 4

This form explains itself. See copy.

Arnold Kruckman's

Washington Letter



Reconversion Is a Stupendous Job

IT IS difficult to write this report because there are reasons, but there is no orderly logic behind the recent series of explosions in WPB. Nelson was bound to go in a burst of excitement some day, but it was wholly illogical for Wilson to be eliminated and for Krug to come in. The President really wanted Wilson to be the chief engineer in WPB until the German phase of the war is over; they tell us he liked Wilson and that he was altogether sold on his policy of first winning the war with production and then putting the same steam into reconversion. Apparently the President went all the way in this program with Gen. Marshall, Gen. Somervell, Justice Byrnes, Barney Baruch, Admiral Leahy, and those whom we generally regard as the solid men with influence at the White House. But when FDR took Nelson at his word and accepted his suggestion that he go to China to do some postwar planning for Asia he made the program to stretch over a longer period than Nelson had in mind.

Nelson's Political Adroitness

You may know all about Nelson's political adroitness; there are relatively few here in Washington who do. Most of the Washington wise men—and women—have wondered how he ever got his tight hold on the members of Congress. It is this experienced and trained political skill, as you will understand a little later, which enabled him to pull down Wilson when he knew his tenure was running out. Shortly after it was announced that Nelson was virtually done, one of those extraordinary barrages of letters, telegrams and even calls were turned loose from all over the country on the White House. They came from the kind of people who apparently reflect public sentiment, and they came from widely scattered places which seemed to reveal universality. Reliable sources report that the President was deeply impressed. It wasn't that he liked Wilson less, but that he assumed the voters liked Nelson more.

You can't drop a pin at the White House end of Pennsylvania Avenue which isn't heard at the other ends of the town before you can pick it up. Wilson naturally heard about the various flips and flops that were happening where he did not think they would happen and undoubtedly he placed more emphasis on some of the tittle-tattle than he might reasonably have bestowed if he had not been working under a great strain for months. Always bear in mind that

Wilson is a great industrial executive administrator, not a politician; things irk a business man which would not even get a frown from a politically-minded person. This condition unquestionably caused Wilson to blow up just when it was hoped he would explode. Quite probably, if he had taken time to think a little longer, or if he had had some good counsel, he might still be in the place where Krug is today. The result naturally pleased those who did not want Wilson, and we are told they did not displease Nelson.

Who Is Krug?

There is considerable debate about the suggestion that Nelson picked Krug as his successor. Nelson's friends wish us to think so. There is no remote doubt that the more extreme progressives with influence at the White House, headed by Hopkins, have for some time hoped Krug would be the top man in WPB. Judge Rosenman undoubtedly likes Krug. The former football star from Wisconsin came into White House favor because Judge Rosenman and David Lilienthal are friends. Lilienthal started Krug on his way up by using him conspicuously in TVA. Lilienthal, as you know, helped to place the skids under Samuel Insull, and Krug, who had specialized in utilities engineering, in some small way is supposed to have been helpful to Lilienthal in those hectic days.

Krug is young—36—and he isn't any more finicky than you would expect a big football star or a ward leader to be; but he has an agile mind, and he is a realist and he is thoroughly practical in the use of any progressive ideals he may have, and he keeps his big, bulky body well planted firmly on the ground. He has a mind that is both incisive and decisive and is a storehouse for plenty of facts and figures that are useful in whatever he is doing. He apparently earned the sobriquet "Cap" Krug because he really can handle people. Before he went on his brief tour of duty in the Navy, when he was third high man in WPB, he surrounded himself with a group of anonymous assistants with huge encyclopedia knowledge and keen wits whose relation to him were much like the relation of the little known counselors to the President. Krug is a genial soul, but he doesn't allow the casual acquaintance to use him. On the other hand, he is noted for his utter loyalty to Roosevelt and for his aggressive loyalty to his associates. He is obviously made of the stuff of a leader and is very ambitious and has the bullock constitution and energy that

enables him to play or work with youthful enthusiasm day and night, and yet keep a clear and level head. It is doubtful he will ever suffer from the same causes that irked Wilson into leaving. Krug is a trained utility engineer, especially in the field of electricity, with some practical business sense, and at the same time is progressive in the New Deal sense, and, above all, is a natural and unusually competent politician. He is generally regarded as reasonable and fair.

We think here Krug's main job the next three months, at least, will be to sit on the lid and to keep it tightly down. There are so many elements which enter into reconversion in these days of an impending election that the best political service for the cause would be to *give the appearance of action without acting*. We expect a great deal of shadow-boxing but very little actual steam behind any effort to knock out the obstacles to the real operation of PR 25. His friends say that Krug thinks industry is more important than the ultimate consumer; that railroads should be put into good shape before we start making knives and forks. Some of the people inside of WPB think that any relaxation which may come will have strings attached to it, some more strings added to those already attached to PR 25. Otherwise you will find everybody wishes to give Small Business the green light.

PR-25 Is Only a Beginning

Almost unanimously here in Washington Government people will tell you, off the record, they do not expect PR 23, PR 24 and PR 25 will operate very briskly until the coming months have clarified things. Everywhere reporters are urged to pass along the word that those who seek to start civilian production under Nelson's much debated orders should move *locally* as swiftly as possible. The regional WPB man is almost the sole answer at this time. He and the WMC and the PUC are able to make PR 25 function, within limitations. The whole tendency in Washington is to push the responsibility onto him. One man in a WPB industry division said he thought PR 25 is, after all, only another process of making an appeal, with more trimmings, and that in most instances the regional man is the final arbiter. The thought here seems to be that those who move quickly and who are early in getting their applications filed have a better chance of getting some action than those who delay. It is quite possible that the regional officials also may unwillingly find themselves in the same doldrums into which inevitably the Washington agencies move when one of these convulsions have occurred. The business men who beat the doldrums into the offices of regional WPB may get there before the pre-election lethargy infects the functions of PR 25. Usually it is only a question of time.

They tell you here it isn't common sense to expect PR 25 to clear the way for general and actual civilian production. Even after the German war is finished, it is predicted by some apparently well informed and responsible sources that the manpower controls must be made even more restrictive until the Japanese war is cleaned up. It is regarded as possible that plants and businesses will be compelled to continue production for war. At the same time they think it is necessary to take every possible step to make ready for civilian production, these preparations being considered imperative to avoid the planless chaos that might break upon us if we were not on the line ready to go.

This school of thought looks upon PR 25 as the prep school for civilian production when the business

of war has reached the culmination which will permit us to quit war work. Apparently the idea is that smaller business should be more fully prepared for peace than the small percentage of larger units which are engaged in war business. Many in Washington who represent those who will function under PR 25, some actually engaged in making furnaces and assemblies used in the installation of furnaces, insist that it is not feasible to convert to civilian production because there are always components you can't obtain until the whole war activity ceases. They mention, for instance, fractional horsepower motors, which are so scant in supply that it is not possible to make the assemblies, and they stress that it will be at least 90 to 180 days before even a trickle of the motors will be available under the PR 25 program.

And when it isn't the fractional horsepower motor it is always something else, whether it is part of the furnace industry program or any other civilian industry. The point they hammer at you is that there always is some key component lacking which you can't obtain until the cutbacks have reached that stage which apparently Nelson had in mind when he said war production will drop over-all at least 30 per cent when the German war is finished. And always bear in mind there are those who think seriously that dismembered sporadic war will continue in Germany for months even after the Germans are decisively licked; obviously this appears to mean that the end of the war cannot be said to have been achieved until all these various but simultaneous smaller hostilities have been put down.

Is Another Agency Needed?

We also are told here by some representatives identified with parts of your industry that any start on civilian production must be simultaneous, and there are still others who say they do not yet want civilian production. The problem patently is not simple, and it clearly is not only the WPB (and other war agencies) which puts the brakes on PR 25. Venetian blinds, medicine cabinets and other cabinets made of sheet and plate and galvanized iron, all of which are listed as critical, offer another example.

It is reported appeals for material to make Venetian blinds from manufacturers who pleaded hardship recently have been extremely heavy. These appeals have gone through the proper WPB clearing committee and in good faith the committee has almost daily approved items which total, according to report, an astonishing tonnage of metal. The total caused one official who knows something about the industry but has nothing to do with the processing of the appeals, to wonder if the people in the industry realized they are in a fair way to flood the market with an extraordinary surplus of venetian blinds. And apparently he felt what is true of venetian blinds relatively also is true of the production of metal cabinets and similar articles for civilian use. He finds no reason to blame the industry. He agrees it is logical for a business man to make that which is most simple and is most profitable. But also being familiar with other problems connected with the industry which uses sheet and similar materials, hard to get, he wonders why there isn't some agency in Government which might watch the trends and which might deflect some of the material (apparently routed disproportionately to blinds and cabinets), for example, to those who have difficulty in obtaining the same materials for the articles they seek to make. No one

(Continued on page 134)

PR-25—"Spot Authorization" Order

Priorities Regulation 25—the so-called "spot authorization" order—is, perhaps, the most important step so far taken to reconversion of industry from war production to peace production. PR-25 affects manufacturers primarily, but all users of civilian products will find their supply affected. The explanation following will help explain to contractors why the way is not wide open to full production. For a complete study of the order get a copy from the Form Room of your local or area WPB office.

THE so-called spot authorization procedure, established by Priorities Regulation No. 25, effective August 15, provides a method for authorizing civilian production through field offices of the WPB, when labor, facilities and materials are available and are no longer needed for war or essential civilian production (AA, August, 1944, page 51).

Production will result under the authorizations made by this procedure only when materials and components are available in new supply or in idle and excess inventories. Since new supplies in any appreciable quantity will not be available until the war production program is reduced, the immediate production that will result will come mainly from the use of materials and components in idle and excess inventories.

This procedure specifies the method of how WPB will authorize production of certain civilian products without attempting to define when such action can be taken.

Pursuant to Priorities Regulation 25, a manufacturer can make application under this procedure for permission to resume or increase the production of a civilian product controlled by an L or M order which has been amended or which is listed on a direction to the regulation. A manufacturer can qualify for application under this procedure only if he has facilities and manpower available to carry out the production. It will be the function of WPB to determine if such facilities can be devoted to the requested production. The question of whether manpower is available for the requested production is left to the decision of the War Manpower Commission if the plant is located in an area where no Production Urgency Committee exists. If the plant is located in an area where a PUC exists, then the availability of manpower must be approved by both WMC and PUC before authorization to produce may be granted.

Administration of this procedure will be centered principally in the field offices of WPB, where action can be taken under local spot conditions.

How Applications Are Made

As provided in Priorities Regulation 25, applications for authority to produce and for production materials will be made on Form WPB-4000, and filed with a completed Form WPB-3820 (Revised) with the WPB field office for the district in which the applicant's plant is located. Established Controlled Materials Plan procedure will be followed in that separate applications will be required for product classifications (code), following the listing in the WPB publication, "Products and Priorities." Several products within a single product classification may be

combined on one WPB-4000 application, but only one product classification may be included on each application.

Form WPB-4000 provides for a showing by the producer of his proposed production schedule; the controlled materials required to support the schedule, segregated into quantities that will be put into production and purchase requirements. Form WPB-3820 (Revised) requires certain manpower information.

Each application should also be accompanied with a transmittal letter answering the question asked in the instructions and supplying other explanatory information.

The applicant should determine whether the product he wishes to make is covered by an L or M order that has been amended, or is listed on Direction 1 as scheduled for amendment. (List of orders affecting this industry shown with this report.) If the controlling order is not listed in the direction or has not been amended, the application should not be made.

He should determine what materials and components other than controlled materials he requires to produce the product. The situation with respect to tightness of such items should be investigated by the applicant, particularly if it is generally indicated that the item cannot be obtained with an AA-5 rating in the case of utility products, or no rating in the case of other products. (Fractional horsepower motors are an example, or bearings.) Higher ratings can be assigned only in the case of exceptional emergencies and all such cases must be approved in Washington, so the applicant must take his chances with no rating or the low rating and buying from idle and excess inventories.

Very small quantities of new materials, if any, are now available for allotment. Applications indicating use of surplus materials will be more favorably considered. For controlled materials, the difference between the quantities he shows "to be put into production" and his "purchase" requirements reflect the amounts he can use from his own inventory or acquire from the idle and excess inventories of others.

Insofar as tools and equipment are concerned, he should investigate the procedures under Priorities Regulation No. 24. If construction is involved, the procedures are under L-41. He should explain in his transmittal letter his need for tools and equipment so this can be considered in processing his application. While authorization may not be denied because he needs additional facilities, it is unlikely that allotments of new materials will be made unless he can show he has facilities to put the materials to use.

The applicant must show (1) that he has man-

power available for this production without interfering with any other production in the plant or (2) that he has access to manpower that is not required for essential production elsewhere. He should carefully explain his situation with respect to manpower when he files his WPB-3820 (Revised) and authorization will be granted only if WPB and WMC determine the use of his labor will not interfere with local or inter-regional efforts to recruit labor.

Screening in Field Offices

The field office will examine all applications for completeness and accuracy. Field analysis will check each application against Directions to Priorities Regulation 25 which lists those WPB orders from which exemption may be obtained under the spot authorization procedure and against amendments to orders permitting use of Priorities Regulation No. 25. If the product applied for or the materials to be used is governed by a WPB order that has not been amended to permit application and therefore is not listed in a Direction, the application will be rejected.

The field office will classify all applications into (1) Washington cases, which will be forwarded with field office recommendations to the responsible WPB industry divisions for final action, and (2) field cases, which will be handled entirely by the field office.

Washington cases will be those applications on which the proposed production will require (a) more than 50 production workers in the critical West Coast Areas, (b) more than 100 production workers in Group 1 or Group 2 Labor Areas, or (c) more than 250 production workers in Group 3, Group 4, or Unclassified Labor Areas. If the number of workers shown for any one month exceeds the above limits, it will be classified as a Washington case.

The field office will determine whether or not the product is a preferred utility product. The Office of Civilian Requirements in the field office will be consulted in all doubtful cases in making this determination.

Review of Facility Information

A copy of all the application forms WPB-4000 and WPB-3820 (Revised) and the transmittal letter will be referred to the Production Service Department of the field office for review and recommendation.

Where the Production Service Department has information previously obtained regarding the size and nature of the applicant's facilities, and they have otherwise been requested to suggest facilities similar to the applicant's for production of a military item, they will contact the applicant to determine if he is able and willing to undertake this more important production.

In accordance with the instructions for filing WPB-4000, the applicant is required to show in his transmittal letter whether he requires any additional facilities, processing machinery or equipment in his plant in order to carry out the proposed production. If so, he is also asked to show how he proposes to get them. In these cases the Production Service Department will make a recommendation as to whether, in its opinion, the equipment required can be obtained by the applicant by the methods he proposes, or whether other methods should be used. If it can be determined that the facilities required cannot be obtained and are required by the applicant before he can make any of his product, the field office may deny the application, subject to reconsideration when such facilities can be acquired. If it is determined that the applicant can produce some or part of the products applied for

without the additional facilities, a recommendation will be made as to whether allotments of new materials should be made, or the authorization should be confined to the use of idle and surplus materials. In consideration of individual situations, supplies of new materials will be allotted to applicants who can better utilize them for maximum production.

The Production Service Department will also review the answer in the transmittal letter to the question in the instructions to WPB-4000 regarding the changes that have occurred, or are expected to occur, that makes it possible for the plant to apply.

Manpower Investigation

An investigation of the manpower situation must be made in each case regardless of plant size or location.

One copy of Form WPB-3820 (Revised) will be forwarded by the WPB field office to the WMC area office, and a second copy to the Chairman of the Area Production Urgency Committee, where such committees exist, for their information.

The answers supplied by the applicant on Form WPB-3820 will show (a) the number and type of workers to be released if production is not approved; (b) the number of workers to be engaged in the production; (c) where new workers, if any, will be obtained; and (d) the number and type of any additional workers that may be required.

The WMC area representative (preferably the WMC member of the APUC) will certify on WPB-3820 (Revised) whether the required labor, or any portion of it, is available for the requested production without interference with local and inter-regional labor recruiting efforts. This copy of WPB-3820 (Revised), as certified by WMC, will be furnished to the APUC chairman. Provided the WMC certification, with respect to labor availability, is favorable, the chairman of APUC with the advice of the committee shall determine whether authorization shall be granted. The determination of APUC, signed by the chairman, shall be shown on WPB-3820 (Revised), showing the WMC certification, which shall be sent to the WPB field office.

Where the certification of the WMC with respect to labor availability is unfavorable, the APUC chairman will indicate his concurrence on the same copy of WPB-3820 (Revised) which shall be sent to the field office which in turn will deny the application.

Where APUC committees have not been established, the WPB field office will perform the APUC function.

Where the determination with respect to labor availability is favorable, authorization of production may be made by either the field office or WPB Industry Division, depending upon the classification of the application as a field case or Washington case. Applications for which the labor availability determination is unfavorable will be denied by the field office. In the event the required labor is determined to be only partially available, the application will be denied but the applicant will receive instructions to file a new application requesting permission to use the available labor.

Authorizing Procedure

Where it has been determined that labor is available for the proposed production, field office authorization may be granted as follows:

(1) A production schedule in dollars, and also in units if a unit schedule is shown on WPB-4000 will be shown on the authorization form CMPL-150c, equal to the schedule shown by the applicant on his WPB-4000 application.

(2) Allotments of controlled materials may be made, consistent with the size of the reserves available, in order to provide the greatest utilization of the quantities available for allotment. For example, it is more desirable to grant allotments to those applicants who can use large quantities of surplus materials with "fill-in" amounts of new materials, who have facilities immediately available to utilize new materials or who can provide employment for many workers. Also in making allotments, preference will be given to manufacturers applying for authorization to produce preferred utility products.

(3) Production schedules can be authorized without making allotments. Such action permits the manufacturer to acquire and use surplus materials. After an authorization without allotments, the manufacturer may be able to show more specifically his need for new materials on a supplementary application after he has tested the surplus market.

(4) In no case may allotments be made in excess of the amounts that may be specified by the regional director unless approval is obtained in the manner prescribed by the director. The purpose of this provision is to protect the regional reserve from being quickly used up, since requirements cannot be added up and the available supply divided. Also by establishing such limits more plants can be assured of participating in the reserve.

(5) When allotment reserves have been established for advance quarters, allotments for advance quarters will be granted to manufacturers upon request if they are considered by the field office to be necessary.

Authorization form CMPL-150c will show (1) the name of the product, (2) the schedule and (3) allotments, if any. A preference rating of AA-5 will be assigned if the manufacturer is making OCR products while no preference rating will be assigned for the production of other products. The allotment symbol Z-1 has been assigned by the use of the form.

Redistribution Activities

The authorization Form CMPL-150c and the transmittal letter which will accompany it explain the manufacturer's rights with respect to the acquisition and use of surplus materials. After authorization on either a field or Washington case, the manufacturer may need assistance in locating and buying surplus materials and components.

The redistribution division (AA, August, 1944, page 44) will assist the manufacturer in locating and buying the kind and type of materials and components that he requires. If no controlled materials of the type required can be located, the redistribution division may advise the applicant to make a supplementary WPB-4000 application explaining what is required and the efforts made to locate surplus materials. If components or other than controlled materials are required that cannot be located in surplus and delivery cannot be obtained, the manufacturer may be advised that he can file a letter requesting an uprating for specific quantities of specific items from AA-5 in the case of utility products, or a rating in the case of other products.

Changes in Products Authorized

After authorizations are made, manufacturers may discover that the surplus materials they can locate and buy cannot be used to make the product authorized, but could be used to make another product.

If the manufacturer can make a statement that there will be no change with respect to his manpower situation in making a product other than the one

authorized, the field office may permit the change by preparing and issuing a new CMPL-150c showing the new product and schedule. A letter will be sent with the new CMPL-150c cancelling the previous production schedule. In cases of emergency the manufacturer may be notified by wire to proceed, sending a revised CMPL-150c for confirmation.

Other Interim Actions

Supplementary applications on WPB-4000 may be made requesting an increased production schedule or an increased allotment.

An increased production schedule may be authorized provided there is no change in the applicant's manpower situation, or after a favorable manpower finding based upon a newly filed WPB-3820 (Revised).

The real need for allotments probably can be determined better on the basis of interim applications, because the manufacturer will have had time to attempt to locate and buy surplus material. He can explain just how much he needs to continue production and can demonstrate the effect of an allotment denial on his operation. Minimum allotments will be provided (consistent with the size of the reserve) so a manufacturer in such a position can continue to operate.

Requests for an uprating from AA-5 in the case of OCR products, or for a rating in the case of other products, must be confined to requests for specific quantities of specific items, and if favorably recommended by the field office, will be referred to the Special Rating Branch, Washington, D. C., for final action.

The following items are those which will be given a preference rating of AA-5 under Priority Regulation 25 providing the other conditions in Priority Regulations 25 have been met. This list has been prepared by the Office of Civilian Requirements of the War Production Board and may be changed by that office to include additional essential items.

Order Previously Restricting Production	Product for Which Priority Assistance Will Be Given
L-13-a—Metal Office Furniture and Fixtures	Cabinets, Bathroom and Utility Filing Cabinets, Steel Safes and Safe Deposit Boxes, School Furniture
L-23-c—Domestic Cooking Appliances and Domestic Heating Stoves	All items
L-30-a—Galvanized Ware and Non-metal Coated Metal Articles	Ash Cans, Baskets, Utility and Wire Picking, Funnels, Garbage Cans, Oil Cans, all sizes
L-29	All items
L-38—Industrial and Commercial Refrigerating and Air Conditioning Machinery and Equipment	Ash Cans, Baskets, Utility and Wire Picking, Funnels, Garbage Cans, Oil Cans, all sizes
L-74—Oil Burners	Blood Plasma Equipment; Coolers: Evaporative, Walk-in, Water, Reach-in and Refrigerated Display Cases, Frozen Food Dispensing Equipment, Home Freezers, Ice Cream Cabinets, Air Conditioning Equipment
L-75—Coal Stokers	All items
L-173—Oil and Gas Space Heaters	Stokers: Class A, Class B
L-182—Commercial Cooking and Food and Plate Warming Equipment	All items
L-270—Automotive Maintenance Equipment	Automotive Maintenance Equipment for Shops and Garages
L-292—Food Processing Machinery	All items
L-308—Food Dehydrators, Domestic	All items
*M-9-c—Copper	Blow Torches, Weather Stripping, Rain Goods
*M-11-B—Zinc	Rain Goods
*M-38—Lead	Furnace Scoops, Rain Goods, Water Storage Tanks for Agricultural Use, Weather Stripping
*M-126—Steel	

*Only products not restricted by L orders are listed here.

Interpretations, Amendments, Easements To Existing Orders

Warm Air Furnace Production

ACCORDING to Plumbing and Heating Division, WPB, warm air furnace manufacturers reported production of 67,886 furnaces for all fuel types in the second quarter of 1944. This compares with a production of 73,764 furnaces for all fuel types in the first quarter of 1944.

Department of Commerce, for 100 manufacturers, reported orders booked for the second quarter of 1944 of 51,583 furnaces for all fuels and including both gravity and winter air conditioning units. These orders booked for the second quarter were divided as follows: complete winter air conditioning units; cast iron: coal fired 660, gas fired 448, oil fired 29. Steel: coal fired 584, gas fired 586, oil fired 677. Gravity warm air furnaces, cast iron: coal fired 31,026, gas fired 176, oil fired 14. Steel: coal fired 16,140, gas fired 1,178, oil fired 75.

Total orders booked in the first quarter of 1944 were 42,825 units of all types.

Gutters on New Houses

MODIFICATIONS in construction limitations to reflect recent changes in War Production Board orders governing the construction industry are permitted by Schedule A to CMP Regulation 6 amended.

The amendments are applicable to builders who have received authorizations on Forms GA-1456 subject to the construction limitations dated February 1, 1944, and Schedule A to CMP Regulation 6 of May 23, 1944.

When a restriction on the use of an item is changed or removed by an amendment to general construction limitations list issued after an authorization has been received, the builder may disregard the previous restriction and follow the new provision without obtaining specific authority.

(Editor's Note: This may permit use of metal gutters and downspouts on approved, privately financed houses. Ask your local WPB.)

MPR-251 New Ceiling Prices

THE construction industry, after August 26, 1944, may add to presently established ceilings for construction services, increases in wage costs since October 3, 1942, that have been approved or authorized by the Wage Adjustment Board, National War Labor Board, or Economic Stabilization Director, the Office of Price Administration announced August 22.

In computing ceiling prices under the revised regulation, the new approved wage rate may not be substituted for the old rate, since the percentage margin factor of the pricing formulas would cause unwarranted price increases. The difference in labor cost between the old rate and the new adjusted rate is added to the maximum price.

The pricing methods now provided are:

(1) On unit-price jobs, such as per hour for plumb-

ing charges or per square for roofing if the seller did the same kind of work in March, 1942, he uses his own March, 1942, rate or pricing method, adjusted by him for increases in material costs and increases up to and including October 3, 1942, in labor costs; if he did not do the same kind of work during March, 1942, the OPA District Director will, after application, authorize a price.

(2) On contract jobs in general, the seller figures his maximum price on the basis of current costs of materials and October 3, 1942, labor rates, with the addition of other actual direct costs, and a base period percentage margin. Increases authorized by the wage agencies since October 3, 1944, may be added to the maximum prices.

Other changes include: (1) removal of the requirement that a certification of compliance with the regulation must be given on all sales over \$500 (a certificate is now required only where demand is made of the buyer), and (2) the delegation of authority to Regional Administrators to issue pricing orders for particular kinds, types, or classifications of construction sales and services in communities where there is need for such action.

(Revised Maximum Price Regulation No. 251—Construction Services and Sales of Installed Building Materials—effective August 26, 1944.)

L-41 Changes

PROVISIONS pertaining to equipment installations or relocation of machinery in a structure as controlled by Construction Conservation Order L-41 have been modified.

These changes were made by amendment to Conservation Order L-41, amendment to Direction 2 to Order L-41, Interpretation 10 of Order L-41, and amendment to Direction 15 to Controlled Materials Plan Regulation No. 5, issued simultaneously August 19, 1944.

The provisions of the amended order apply to the installation of any processing machinery or equipment, whether approved on a special form or not, and also to the installation of any single piece or group of related pieces of any other kind of machinery or equipment approved by WPB on a special form.

The amendment to Direction 2 to Order L-41 permits any person to install, without WPB approval under L-41, a single piece or a group of related pieces of processing machinery or equipment, or a single piece or a group of related pieces of any other machinery or equipment approved by WPB on a special application form, if the total cost of the entire installation, including the cost of the equipment, does not exceed \$25,000 and if the cost of the job, not counting the cost of the equipment, does not exceed \$5,000. (A. A. believes this covers all types of "blow pipe" work and ventilation—check with your local WPB.)

Under Interpretation 10 of Order L-41, if the cost of the installation exceeds the designated cost limits, permission under Order L-41 is required even though the equipment has been obtained on Form WPB-541 or Form WPB-542, it was emphasized.

Heretofore, the cost of processing machinery or equipment was not counted in figuring the cost of the job in determining the necessity for WPB permission under the terms of L-41. Certain large industrial plants were permitted, under certain conditions, to install any number of single or related pieces of processing machinery if the cost of the installation materials used for each machine did not exceed \$500. These provisions are changed by the amendment to L-41 and by the establishment of the \$25,000 cost limit in Direction 2.

Formerly, the provisions of Direction 2 applied only to factories or plants having a productive floor area of 10,000 square feet or more. The amendment permits the installation of machinery or equipment approved by WPB on a special form, within the cost limits, without qualification as to type of business. It also permits relocation of any machinery or equipment in any industrial plant or factory without restriction as to productive floor area. However, the former \$500 cost limit for materials to be used in the relocation of equipment has been retained.

Direction 15 to CMP Regulation 5 was amended to permit persons engaged in a business designated on the schedules of that regulation to use their Maintenance, repair and Operating Supplies symbol and rating to obtain materials for work permitted by the amended Direction 2 to L-41. Where no construction is involved, the amendment to Direction 15 to CMP Regulation 5 also permits such persons to use their MRO symbol and rating to obtain up to \$500 of materials to be used in installing equipment obtained on a WPB special application form.

Excess Stock Invoicing

TO relieve certain resellers of iron and steel products of the burden of keeping their excess stocks segregated, OPA has exempted them under certain conditions from complying with the provision which requires special invoicing of excess stocks.

This exemption does not apply to the type of reseller known as a "holder." A "holder" is defined as any person who buys an iron or steel product for use in manufacturing, and now wishes to sell material he no longer has need for.

Under Amendment No. 23 to Revised Price Schedule No. 49, sellers were required to mark every invoice issued in connection with a sale with one of the following phrases: "excess stock," "idle or surplus stock," or "idle and excess stock." Further, once iron or steel products have been sold as excess stock they shall continue to be such through all subsequent sales.

The new action, effective June 1, 1944, provides that a reseller (other than a holder) will be exempted from the special invoice designation requirement if he already has complied with three conditions: (1) the purchase of material for resale in substantially the same form as received and its removal, after such purchase, from the holder's location; (2) its delivery, prior to receipt of an order, to premises the reseller regularly maintains for the assembling of iron and steel products for resale; and (3) his performance of the warehousing operation as defined in the schedule.

(Amendment No. 24 to Revised Price Schedule No. 49—Resale of Iron and Steel Products—effective June 1, 1944.)

File 547's Locally

THE distributor's application for preference rating, form WPB 547, used by wholesalers and retailers of hard goods, should be filed with War Production Board field offices beginning August 15, although distributors who sell more than 50 per cent of their total goods outside of their WPB region may continue to file directly with Washington, WPB announces.

The new method, by which applications will first be examined in field offices, is expected to permit a greater consideration of local factors. Forms will be promptly forwarded by field offices with recommendations to Washington headquarters of the Wholesale and Retail Trades Division for final action. All applicants should file with the field office any requests for further action on applications already processed.

In the past, distributors were required to file WPB 547 in duplicate. Under the changed procedure, applicants must submit an original and two copies. The additional copy is required in all cases, including distributors who do more than 50 per cent of their volume outside of the WPB region in which their headquarters are located.

Cancelled Order Inventories

T

HE War Production Board says that persons whose war contracts are reduced or canceled will not be in violation of inventory regulations merely because amounts of materials they hold after a cutback are in excess of a practicable minimum working inventory or, in the case of controlled materials, in excess of a 60-day supply.

This explanation was given in Interpretation No. 3 to Controlled Materials Plan Regulation No. 2.

Particular attention was called by WPB to the fact that the limitations are on an item basis. If a producer has in his stocks the maximum amount of an item of steel (not more than a 60-day supply) that he is permitted to have under the inventory regulations, he may not receive any more deliveries of that item until his stock is reduced to a point where a new delivery of that item would not result in an excessive stock. However, he is not prevented from accepting deliveries of other items of steel if such deliveries will not give him an excessive inventory of those particular items.

The interpretation also points out that CMP Regulation No. 2 does not affect the liability of a customer for material in either his inventory or his supplier's inventory, when his contract is canceled. Such liability is controlled by the provisions of the contract between the two parties and by contract law.

Copper Screening Released

S

OCKS of bronze and copper screening held by the Metals Reserve Company have recently been released for sale.

Detailed information about the screening may be obtained from the company, 155 East 44th Street, New York City.

This screening is sold "as is" to (1) jobbers, wholesalers and retailers, (2) to the military and other designated governmental agencies, and (3) to other
(Continued on page 121)

On Our Industry's Front

Furnace Smoke Pipe

REQUIREMENTS for stove and furnace smoke pipe are being fulfilled, the Stove and Furnace Smoke Pipe Industry Advisory Committee was told at its recent meeting, and production is keeping pace with the amount of material allocated for the manufacture of these pipes.

Requirements for stove and smoke pipes in 1944 total approximately 80 per cent of 1941 production. Manufacturers have been allotted sufficient material to produce this amount. Some additional material is needed, however, for production of warm air distribution pipe and fittings and for registers and grilles, committee members said.

Officials said that no inventories of finished pipe are being built up since the pipe is shipped as soon as it is produced. Committee members reported that inventories of raw materials are extremely low, but that factories have been able to maintain continuous production.

It is impossible to predict the future supply of light gauge steel and galvanized sheets used for stove and furnace smoke pipe and for warm air distribution pipe because future military demands are subject to change, an Iron and Steel Division spokesman told the committee. The present supply of these light gauge sheets is more critical than it has been at any time since Pearl Harbor because of increased military orders. Facilities for rolling galvanized sheets have increased but are still insufficient to meet all requirements. Manufacturers can anticipate some delay in delivery of their orders already placed because some mills are as much as several weeks behind on their schedules.

In discussing the possibility of substituting aluminum for steel and galvanized sheets, committee members expressed the opinion that aluminum could be used for warm air distribution and return pipe, but not for stove and furnace smoke pipe. They reported that the high temperatures to which smoke and stove pipe are subjected might preclude the use of aluminum. Members also pointed out that the present cost of aluminum prohibits its use for these purposes.

Protection for Sub-Contractors

PROCUREMENT Policy Board, a WPB committee composed of representatives of WPB, the Army, Navy, Treasury Department and other contracting agencies, on August 22 published policies for the protection of manufacturers of war materials and components.

The principles, announced for the guidance of the war contracting agencies, war prime contractors and subcontractors, are designed to give additional security, in the event of cutbacks and contract terminations, to these manufacturers, many of them small plants, producing as subcontractors.

To insure a steady supply of materials and parts, these manufacturers must frequently produce in advance of the receipt of orders. In the event of sudden changes of war production programs, they may find it

difficult to dispose of their inventory. Unless they have a backlog of orders entitling them to a fair termination settlement under the principles of the Contract Settlement Act recently passed by Congress, they may not be able to avoid loss on the inventory.

The Procurement Policy Board has adopted the following four major principles to meet the needs of this important group of manufacturers:

1. Component and material manufacturers will be encouraged to require war contractors and subcontractors with whom they deal to place orders for components and materials long enough in advance to give protection during the necessary period of production.

2. The contracting agencies will insist that war contractors and subcontractors place such orders reasonably in advance and in amounts sufficient to enable them to meet the requirements of their own contracts.

3. War contractors and subcontractors will be urged to plan the purchase, production and delivery of components on a sound basis that will insure that components and materials will be available, but at the same time avoiding the unreasonable accumulation of an inventory in advance of actual production needs.

4. Component and material manufacturers will be assisted in obtaining provisions in orders placed with them that will insure them of a fair settlement if the orders are canceled. Standard provisions of this type for use in subcontracts were recently approved by the Director of War Mobilization.

Hot Dip Advisory Committee

T

HE appointment of 12 representatives of firms producing hot-dip galvanized products to an industry advisory committee is announced by the OPA.

The committee will meet with OPA at a later date for a discussion of pricing problems of the industry, made up of some 300 individual companies engaged in the production of essential military and civilian goods.

Members appointed to the industry advisory committee are:

A. J. Blaeser, Joslyn Manufacturing and Supply Co., Chicago, Ill.

R. B. Bolles, Commercial Metals Treating, Inc., Toledo, Ohio.

F. C. Brightly, Jr., Standard Galvanizing Co., Chicago, Ill.

E. B. Byles, James Hill Manufacturing Co., Inc., Providence, R. I.

F. M. Carlson, American Tinning and Galvanizing Co., Erie, Pa.

K. F. Forsyth, Emsco Derrick and Equipment Co., Los Angeles, Calif.

G. I. Gregory, Thomas Gregory Galvanizing Works, Maspeth, N. Y.

H. W. Hake, Hake Galvanizing Works, Harvey, La.

H. Hofkin, Penn Galvanizing Co., Philadelphia, Pa.

P. Ingorsoll, Wilcox Crittenden & Co., Inc., Middletown, Conn.

W. H. McKenna, Hanlon-Gregory Galvanizing Co., Pittsburgh, Pa.

J. B. Tate, The Witt Cornice Co., Cincinnati, Ohio.

Reject or Idle Steel Sales

STEEL Division, WPB, points out that Direction 44 to Controlled Materials Plan Regulation No. 1, issued January 22, 1944, authorizes distributors having off-grade or rejected steel or idle or excess inventory that they are unable to move under CMP regulation, to apply to WPB for permission to dispose of such material.

Each application must be submitted in duplicate, and must contain the following information: (1) name of prospective customer, (2) product to be made, (3) description and location of the material, (4) length of time the material was held, and (5) the reason why the holder was unable to move it under CMP regulations.

Material otherwise unsalable is permitted to move from warehouse to users approved by WPB, even though these users do not have allotments. The end use of the products, however, must satisfy conditions of WPB, and deliveries approved must not be used to support stock replacement orders, Mr. Foy explained.

WPB will consider applications from distributors for permission to dispose of any steel in their stock, regardless of the source from which it was purchased. However, granting of requests will mean foregoing replacement in stocks of the tonnage involved. Order M-21-b-1 and Order M-21-b-2, which became effective July 15, 1944, declare that any delivery authorized by WPB under Direction 44 is non-replaceable in a distributor's stock.

No applications for domestic cases will be considered unless the steel offered for sale has been in the warehouse longer than 60 days. If end-users intend to produce restricted or prohibited products, distributors must attach a copy of the specific authority issued by WPB to the customer seeking relief from the limitation order in question.

Applications for domestic cases should be directed to the Warehouse Branch, Steel Division, War Production Board, Room 1528B, Social Security Building, Washington 25, D. C.

Effect of PR-25 on Stokers

THE general expectations behind PR-25 are reported elsewhere in this issue. PR-25 permits production of both Class A (industrial) and Class B (domestic) stokers, but the net result of the order is reported by Stoker Manufacturers Association as follows:

"It is obvious that under this order, production of Class B stokers for the present will be EXTREMELY LIMITED. In fact, it has little meaning to the stoker industry except possibly a few manufacturers who have excess materials and inventory on hand, which can be assembled into complete Class B units without interference with labor and plant facilities and consequently without interference to war production. In such possibly few cases, permission must be secured—the necessary forms filled out and filed with their local WPB offices, and clearance from the local WMC representative obtained. As far as we can see at this moment, this order does not mean the opening up of Class B stoker production even though the newspaper headlines and the sensationalists have tried their best to leave the impression with the public that everything is hotsy-totsy now."

Steel Drum Materials

ROLLING capacity for sheet metal will hardly meet requirements as established for the third quarter, and steel drum manufacturers should not anticipate metal increases for industrial uses at present, the War Production Board says.

At a recent meeting of the Steel Shipping Containers Industry Advisory Committee, Government representatives emphasized that the sheet metal situation has not eased and that military demands on rolling mill capacity are at an extremely high point.

MPR 251

OFFICE OF PRICE ADMINISTRATION
Washington 25, D. C.

August 4, 1944

Sheet Metal Contractors National Assn.

Dear Mr. Meyer:

I have reviewed the recent correspondence which we have had with respect to your objections to the revision of Maximum Price Regulation 251, and the construction regulation, and I feel that there is little which I can add to my July 5 letter which sets forth in detail our position concerning price control for the construction industry.

May I point out to you that at no time, by either myself or my predecessor was any promise made, as you state, that the entire construction industry would be exempted from price control.

You stress the point that the price of every job is predetermined by highly competitive bidding, thereby insuring owners and the government against overcharges or excess profits. Are you not overlooking the fact that many services and sales are let upon other than a competitive basis?

I express again the wish that we may have your co-operation.

Sincerely,
CHESTER BOWLES,
Administrator

This letter absolutely evades and side-steps everything that we have written to him in our former letters, and it appears as though he is going to try to dictate this MPR-251 and push it down the throats of our industry.

If your association will get busy "NOW," and get every one of your members to swamp Congress and the OPA with so many letters that they will know we do not want this regulation, we might have a chance of stopping it. Please bear in mind that if it is enforced, it will mean untold filing of forms before and after jobs are started, and will cause confusion within the industry and increase our cost of doing business.

Your membership should be interested enough in stopping these Washington bureaucrats from imposing further restrictions on our business, to act at once.

The following is your Secretary's answer to Chester Bowles' letter:

August 9, 1944

Office of Price Administration,
Washington 25, D. C.

Att: Chester Bowles, Administrator
Dear Mr. Bowles:

Your letter of the 4th received. I can say quite candidly that I did not expect you to change your ideas or position concerning price control.

We American citizens, having rights and privileges granted to us under the Fifth Amendment of the Constitution, are continually seeing our freedoms engrossed and transgressed upon under the guise of war efforts.

No, we are not overlooking the fact that many service sales are let upon other than a competitive basis, but

(Continued on Page 121)

AMERICAN ARTISAN

RESIDENTIAL AIR CONDITIONING

SECTION



DEVOTED TO HOME AND SMALL COMMERCIAL AIR CONDITIONING



**He said:
"HELLO STRANGER!"**

Of course, the dealer was only kidding. It made the Janitrol man feel a little badly, though, to be called "stranger" after so many years of contact and cooperation.

True, the important wartime job of your Janitrol Representative has kept him away from his old friends for the past several months. But now he's planning to see you more often—bringing new angles, new facts, on his number one business—gas heating.

For instance, in supervising the installation and maintenance of Janitrol Aircraft Heaters—a product specially developed for war needs—he has learned that gasoline is *not* a logical fuel for normal home and industrial heating requirements—that this

type of heat, excellent as it is for special purposes, could not replace the efficiency and economy of gas.

He has also found that many important developments in aircraft heaters—new uses of alloy sheet steel, new methods of heat transfer—can be successfully applied to gas furnaces to further improve their competitive position—but not until they have been thoroughly proven in the laboratory and in test installations—all of which takes several months, or even years to complete.

In short, your Janitrol Representative has learned many things about heating with different types of equipment and fuels. And this experience

will be helpful to him and the company when consumer production and selling again becomes our principal activity.

So he's coming back to dealer contacts with an even stronger confidence in the tremendous future of gas as a fuel . . . and with plenty of *solid experience* to correct any postwar dreamer who may propose to heat a home with an aircraft heater in a bureau drawer.

We at Janitrol are working *today* on the improvement of finest gas heating equipment modern engineering skill can devise. As soon as conditions permit, they will again be available to give American homes and business the world's finest heating—with gas.

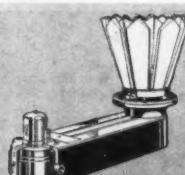
SURFACE COMBUSTION • TOLEDO 1, OHIO



Winter Air Conditioning



Gravity Furnace



Conversion Burner



Unit Heater



Floor Type Blower Unit

GAS-FIRED

JANITROL
HEATING EQUIPMENT

American Artisan Dealers Report on Plans for Selling the Post War Market

WHEN the nation's war demands made it impossible for homeowners to exercise a "free" choice in types of heating equipment and fuels, the whole pattern of "heating trends" which had been slowly evolving during the 1930's came to an abrupt stop. For the past two years it has been necessary for homeowners to forget all modernization and improvement and for the warm air heating dealer to devote all of his curtailed facilities strictly to keeping existing systems in the best possible operating condition.

In the heating market which will follow the war, it seems likely that the trends which existed before the war will take up where they stopped—modified, perhaps, by homeowners' and dealers' experiences during the war period. Some authorities profess to see decided changes in preference. For example, we frequently hear that homeowners who have suffered under fuel oil rationing will, after the war, switch to fuels which seem more plentiful; or homeowners who selected oil or gas for their labor-saving characteristics, may shy away because of all the gossip of fuel scarcities. Also, owners who have had difficulty keeping intricate mechanical apparatus functioning may decide to go back to methods and equipment which possesses a minimum of mechanical parts.

In the questionnaire mailed to American Artisan readers asking for a listing of the "heating services" offered homeowners, dealers were also asked to express their opinion on post-war trends and plans. The replies have been grouped and tabulated and will be presented as six studies—"Dealers' Plans for Selling the Post-War Market". The first two studies—on oil and gas burning equipment—appear on the six pages following. The remaining four studies will appear in the October and November issues.

Four important and decisive facts appear—

1—The complete winter air conditioning unit—meaning furnace, blower, firing device, controls, filters, humidifiers—will far exceed the sales volume and popularity enjoyed when the war stopped the "free" choice by homeowners and the unrestricted sale by dealers. The one exception may be coal stokers attached to existing furnaces.

2—Most warm air heating dealers propose to expand and extend their automatic heating facilities—offering complete units and conversion burners (except, perhaps, conversion gas burners) in order to offer the homeowner any variety of equipment he prefers.

3—There is no widespread or deep-seated fear of scarcities of certain fuels. Both dealers and homeowners are confident that they will get the type of fuel they choose after the war.

4—The pent-up demand for improved, labor-saving, more efficient heating devices is so widespread that the industry looks for at least two years of activity in existing homes so great that every facility will be taxed even if new home construction is slow to get under way.

Readers will note that the replies tabulated are pretty widely scattered and cover most of the critical heating areas. Also, that metropolitan centers and small towns are listed, with "big dealers" and smaller operators reporting. It would seem, therefore, that these studies are a fair cross section of industry opinion and may be used as a guide to post-war planning.

IN the following report on oil burning equipment sales, contractors quite definitely believe that after the war the complete furnace-burner unit will be preferred by builders and home owners over the conversion burner in approximately the ratio of three complete units to one conversion burner — or higher. In the old house field, contractors seem to place the ratio somewhere around 60-40 or 50-50, but there are a surprising number of contractors who believe complete units will outsell conversion burners. Also noteworthy is the report showing whether home owners are frightened over all the talk of oil scarcities — well over half the contractors believe owners are not alarmed and will buy oil. It goes without saying all these contractors intend to sell furnace-burner units — 70 per cent of them also intend to sell conversion burners and "blanket" the market. Some indication of the immediate market for oil burners — whenever burners are available — is indicated in the column asking how many burners each contractor could sell now if restrictions are lifted.

Oil Burning Equipment

State and City	After the War, What Kind of Oil Heating Do You Think Will Be Bought?						Has Talk of Oil Scarcity Frightened Prospects Away from Oil, Postwar? y = Yes, n = No.	How Many CONVERSION Oil Burners Did You Sell in 1940? (DNS = Did Not Sell)	Do You Expect to Sell CONVERSION Burners After the War?	Parts Carried in Stock for Service and How Many!				
	Per Cent of Sales			New Houses		Old Houses								
	Complete Furnace-Burner Unit	Conversion Oil Burner	Complete Furnace-Burner Unit	Conversion Oil Burner	Conversion Oil Burner	Conversion Oil Burner				Motors	Pumps	Strainers	Electrodes	Ready Built Combustion Chambers
ALABAMA														
Montgomery.....	100	....	100	....	y	DNS	no	0	0	0	0	0	0	0
ARIZONA														
Phoenix.....	100	10	60	40	n	DNS	yes	20	0	0	0	0	0	0
Tucson.....	90	40	60	60	n	6	yes	12	3	2	6	3	0	0
ARKANSAS														
Paragould.....	90	10	100	....	n	DNS	yes	?	1	0	6	0	0	0
CALIFORNIA														
Martinez.....	90	10	90	10	n	DNS	....	150	3	2	5	1	....	1
Eureka.....	100	0	90	10	y	DNS	yes	....	50	50	50	100	....	1
Oakland.....	100	0	75	25	n	....	yes	....	2	1	4	4	....	0
San Mateo.....	10	90	10	80	y	50	yes	70	2	1	4	4	....	0
CONNECTICUT														
Waterbury.....	25	75	25	75	y ¹	35	yes ¹	20	0	2	0	0	0	0
DELAWARE														
Laurel.....	100	....	50	50	n	25	yes	100	3	6	25	12	6	6
ILLINOIS														
Chicago.....	100	0	75	25	n	100	yes	....	10	4	6	10	0	0
Elmhurst.....	95	5	50	50	y	175	yes	150	16	10	12	4	0	0
Forest Park.....	100	0	50	50	n	25	yes	25	....	....	....	....	....	....
Jacksonville.....	90	10	90	10	n	6	no	....	6	0	6	0	0	0
Kankakee.....	60	40	30	70	y	DNS	no	....	....	....	....	....	....	....
Lincoln.....	90	10	75	25	n	DNS	no	....	....	....	....	....	....	....
Mattoon.....	2	?	?	?	?	....	few	0	6	0	0	0	0	0
Moline.....	100	0	60	40	n	DNS	no	....	....	....	....	....	....	....
Naperville.....	100	0	90	10	n	4	yes	....	3	0	6	1	1	1
Ottawa.....	....	....	....	....	y	3	yes	....	....	....	....	....	....	....
Paris.....	70	30	10	90	n	6	yes	....	2	1	1	0	0	0
Quincy.....	100	....	90	10	n	DNS	no	....	....	....	....	....	....	....
Rock Island.....	100	0	....	....	y	10	yes	?	2	12	25	4	2	2
Wilmette.....	100	0	25	75	y	24	yes	24	2	4	4	4	1	1

State and City	After the War, What Kind of Oil Heating Do You Think Will Be Bought?						Parts Carried in Stock for Service and How Many?					
	Per Cent of Sales						Motors			Pumps		
	New Houses	Old Houses										
	Complete Furnace-Burner Unit	Conversion Oil Burner	Complete Furnace-Burner Unit	Conversion Oil Burner	Has Talk of Oil Scarcity Frightened Prospects Away from Oil, Postwar? y = Yes, n = No.	DNS	Do You Expect to Sell CONVERSION B.-burners After the War?	IF AVAILABLE, How Many CONVERSION Burners Could You Sell This Year?		Strainers	Electrodes	Ready-Built Combustion Chambers
INDIANA												
Brazil.....	75	25	50	50	n	DNS	no	0	.....	.....	.....	.....
Columbia City.....	.....	2	80	20	y	2	yes	6	.....	.....	.....	.....
Fort Wayne.....	98	2	80	20	n	10	few	few	.....	.....	.....	.....
Fort Wayne.....	30	70	10	90	n	DNS	no	.....	.....	.....	.....	.....
Fort Wayne.....	100	0	50	50	few	15	yes	50	7	4	6	25
Hammond.....	70	30	80	20	n	DNS	no	.....	.....	.....	.....	12
Indianapolis.....	30	?	30	70	some	20	yes	50	5	1	10	1
La Porte.....	90	10	90	10	n	50	yes	10	2	1	1	6
Marion.....	100	0	80	20	n	24	yes	25	4	4	4	4
Vincennes.....	100	0	50	50	y	DNS	yes	20	.....	.....	.....	0
IOWA												
Cedar Rapids.....	100	0	75	25	y	1	yes	6	.....	.....	.....	0
Davenport.....	80	20	60	40	n	24	yes	2	2	2	6	2
Davenport.....	100	0	50	50	y	DNS	no	.....	.....	.....	.....	0
Des Moines.....	90	10	40	60	y	113	yes	50	.....	.....	.....	0
Marshalltown.....	40	?	40	60	y	70	yes	25	.....	.....	.....	0
Mason City.....	.....	0	75	25	.....	DNS	yes	?	.....	.....	.....	0
Mason City.....	100	0	75	25	n	2	yes	10	0	0	0	0
Sioux City.....	.....	.....	.....	.....	y	DNS	?	few	.....	.....	.....	0
Sioux City.....	80	20	40	60	n	DNS	no	20	.....	.....	.....	0
Spencer.....	10	.....	.....	.....	.....	8	?	.....	.....	.....	.....	0
Waterloo.....	90	10	50	50	n	10	yes	10	1	1	1	1
Waterloo.....	95	5	75	25	n	50	yes	100	10	10	5	10
Webster City.....	.....	.....	.....	.....	n	?	yes	.....	.....	.....	.....	0
(Several)												
MASSACHUSETTS												
Boston.....	90	10	50	50	n	15	yes	12 ³	.....	.....	.....	0
North Scituate.....	80	20	30	70	n	140	yes	150	12 ²	20	50	25
Worcester.....	90	10	50	50	n	45	yes	150	2 ²	2	1	4
MICHIGAN												
Adrian.....	?	?	?	?	y	DNS	yes	?	1	.....	1	3
Ann Arbor.....	25	?	25	?	n	DNS	yes	88	.....	.....	.....	0
Battle Creek.....	100	0	75	25	n	?	yes	.....	15	4	10	12
Dearborn.....	90	10	80	20	few	20	yes	38	50	10	25	25
Detroit.....	100	0	90	10	n	10	yes	25	.....	.....	.....	0
Detroit.....	100	.....	50	50	n	10	yes	100	0	0	0	0
Escanaba.....	5	?	5	?	n	DNS	no	.....	4	5	12	6
Flint.....	100	0	50	50	n	2	no	.....	4	5	12	6
Flint.....	100	0	85	15	y	few	yes	28	8	12	28	12
Highland Park.....	80	20	60	40	n	20	yes	12	6	6	12	0
Kalamazoo.....	90	10	50	50	n	DNS	no	.....	3	5	8	5
Kalamazoo.....	100	.....	50	50	n	30	yes	35	19	14	6	5
Lansing.....	100	0	50	50	n	18	yes	25	3	5	6	5
Midland.....	90	10	90	10	n	5	yes	10	1	1	1	1
Muskegon.....	100	0	95	5	n	12	?	2	1	1	2	2
New Buffalo.....	?	?	?	?	?	12	yes	20	0	1	4	1
Saginaw.....	90	10	90	10	y	6	yes	3	4	4	2	6
Saginaw.....	90	10	75	25	y	DNS	no	.....	4	0	0	1
Sebewaing.....	100	0	75	25	n	yes	yes	18	2	1	6	6
MINNESOTA												
East Grand Forks.....	100	0	75	25	n	10	yes	20	3	8	12	10
Minneapolis.....	100	0	15	85	y	50	yes	40	6	3	24	12
Tracy.....	95	5	95	5	n	10	few	3	8	3	3	6
MISSOURI												
Joplin.....	100	0	50	50	y	DNS	yes	6	0	0	0	0
Kansas City.....	100	0	15	85	n	6	yes	24	.....	.....	.....	0
Kansas City.....	100	0	10	90	n	4	yes	13	0	2	7	0
St. Louis.....	75	25	25	75	n	25	yes	50	4	3	6	6
MONTANA												
Great Falls.....	100	0	50	50	n	DNS	no	.....	4	1	2	2
NEBRASKA												
Lincoln.....	25	75	10	90	y	10	yes	15	0	0	0	0
Omaha.....	.....	.....	.....	.....	n	10	(Will not push)	0	0	0	0	0
Omaha.....	90	10	85	15	n	25	yes	75	25	40	100	100
Omaha.....	100	0	50	50	n	100	yes	150	12	6	6	8
Scottsbluff.....	80	20	70	30	some	14	yes	50	4	3	5	4
NEW YORK												
Buffalo.....	98	2	60	40	n ⁴	20	?	few	n	n	y	n
Buffalo.....	.....	.....	.....	.....	5	DNS	no	.....	0	0	0	0
Corning.....	80	20	50	50	n	6	yes	15	1	1	6	2
Elmira.....	90	10	75	25	y	DNS	no	.....	3	2	3	0
Kingston.....	90	10	10	90	n	60	yes	100	2	2	2	0
Newburgh.....	90	10	50	50	y	DNS	no	.....	0	0	0	0
Olean.....	75	25	25	75	n	?	yes	?	.....	.....	.....	0
Rochester.....	.....	.....	.....	.....	.....	30	no	.....	.....	.....	.....	0
Rochester.....	95	5	60	40	n	5	yes	20	.....	.....	.....	0
Rochester.....	98	2	50	50	y	5	yes	2	0	0	0	0
Syracuse.....	30	70	70	30	y	18	yes	25	6	3	24	0
NEW HAMPSHIRE												
Manchester.....	80	20	40	60	n	50	yes	200	10	10	10	12

State and City	After the War, What Kind of Oil Heating Do You Think Will Be Bought?										Parts Carried in Stock for Service and How Many?												
	Per Cent of Sales					Has Talk of Oil Scarcity Frightened Prospects Away from Oil, Postwar?					Do You Expect to Sell CONVERSION Burners After the War?					Motors		Pumps		Strainers		Ready Built Combustion Chambers	
	New Houses		Old Houses			y = Yes, n = No.		y = Yes, n = No.			y = Yes, n = No.		Motors			Pumps		Strainers		Electrodes			
State and City	Complete Furnace-Burner Unit	Conversion Oil Burner	Complete Furnace-Burner Unit	Conversion Oil Burner	Complete Furnace-Burner Unit	Conversion Oil Burner	Has Talk of Oil Scarcity Frightened Prospects Away from Oil, Postwar?	How Many CONVERSION Oil Burners Did You Sell in 1940? (DNS = Did Not Sell)	Do You Expect to Sell CONVERSION Burners After the War?	IF AVAILABLE, How Many Conversion Burners Could You Sell This Year?	Parts Carried in Stock for Service and How Many?	Ready Built Combustion Chambers	State and City	Complete Furnace-Burner Unit	Conversion Oil Burner	Complete Furnace-Burner Unit	Conversion Oil Burner	Has Talk of Oil Scarcity Frightened Prospects Away from Oil, Postwar?	How Many CONVERSION Oil Burners Did You Sell in 1940? (DNS = Did Not Sell)	Do You Expect to Sell CONVERSION Burners After the War?	IF AVAILABLE, How Many Conversion Burners Could You Sell This Year?	Parts Carried in Stock for Service and How Many?	Ready Built Combustion Chambers
NEW JERSEY																							
Bogota.....	80	20	40	60	n	y	40	no	50	14	5	4	0										
Penns Grove.....	90	10	20	80	n	y	25	yes	50	2	4	6	6	1									
NORTH DAKOTA																							
Minot.....	100	0	100	0	n	n	DNS	yes	6	0	0	0	0	0									
Wahpeton.....	100	0	75	25	n	n	10	yes	20	1	3	3	6	0									
OHIO																							
Ashland.....	99	1	30	70	n	0 ⁶	yes	2	0	0	0	0	0	0									
Barberton.....	80	20	60	40	n	DNS	yes	25	2	1	6	6	0	0									
Big Prairie.....	75	25	50	50	y	DNS	no	0	.....	.....	.....	.....	.....	.....			
Cleveland.....	100	0	100	0	y	19	?	?	.....	.....	.....	.....	.....	.....			
Columbus.....	.....	0	0	0	y	DNS	no	.....	.....	.....	.....	.....	.....	.....		
Dayton.....	90	10	80	20	y	10	yes	50	.....	.....	.....	.....	.....	.....			
Findlay.....	.....	.....	.....	.....	n	7	yes	18	2	2	3	3	0	0							
Greenville.....	.....	.....	.....	.....	n	DNS	yes	10	.....	.....	.....	.....	.....	.....			
Hamilton.....	.....	.....	.....	.....	n	DNS	no	.....	0	0	0	0	0	0							
Middletown.....	30	70	50	50	n	DNS	yes	50	1	1	3	1	0	0									
Sandusky.....	.....	.....	.....	.....	n	30	no ⁷	.....	.....	.....	.....	.....	.....	.....		
Sidney.....	50	50	25	75	n	DNS	yes	25	.....	.....	.....	.....	.....	.....			
Springfield.....	90	10	10	90	y	DNS	no	.....	0	0	0	0	0	0								
Toledo.....	80	20	50	50	n	50	yes	50	25	25	50	25	0	6									
OKLAHOMA																							
Oklahoma City.....	100	0	25	75	n	4	yes	9	3	3	2	3	0	0									
PENNSYLVANIA																							
Clearfield.....	90	10	50	50	n	15	yes	10	.....	.....	6	11	0	0							
Corry.....	50	50	10	90	y	4	yes	?	.....	2	6	11	0	0								
Erie.....	80	20	40	60	y	DNS	no	.....	.....	.....	.....	.....	.....	.....		
Hollidaysburg.....	01	01 ⁸	.....	.....	n	DNS	.....	.....	.....	.....	.....	.....	.....	.....	
Meadville.....	3	?	5	?	n	4	no	.....	.....	.....	.....	.....	.....	.....		
Mechanicsburg.....	60	.....	40	60	y	3	yes	many	2	1	3	4	0	0								
Pittsburgh.....	.....	.....	60	40	n	12	yes	?	5	1	5	y	0	0							
Reading.....	98	2	60	40	n	35	yes	150	20	20	35	5	0	0									
Tarentum.....	90	10	90	10	y	DNS	yes	?	2	15	.....	0	0	0								
SOUTH DAKOTA																							
Rapid City.....	100	0	50	50	y	DNS	no	.....	.....	.....	.....	.....	.....	.....		
Yankton.....	100	0	40	60	n	6	yes	25	.....	.....	.....	.....	.....	.....			
TEXAS																							
Dallas.....	100	0	100	0	n	n	DNS	4	no	.....	0	0	0	0								
Houston.....	.....	.....	100	0	y	2	yes	?	3	.....	.....	.....	.....	.....				
San Antonio.....	100	0	100	0	y	DNS	yes	?	3	.....	.....	.....	.....	.....				
VERMONT																							
Lyndonville.....	80	20	30	70	n	15	yes	10	4	2	3	6	0	0									
WASHINGTON																							
Seattle.....	80	20	80	20	some	500	yes	1,000	12	6	60	24	20	0									
WISCONSIN																							
Beaver Dam.....	75	25	50	50	n	10	yes	13	1	1	0	0	0	0									
Jackson.....	95	5	75	25	n	5	yes	13	2	12	6	1	1	1									
Madison.....	100	0	60	40	n	25	yes	25	4	6	6	6	6	0									
Milwaukee.....	100	0	40	60	n	DNS	?	.....	.....	.....	.....	.....	.....	.....		
Milwaukee.....	95	5	75	25	n	26	yes	30	5	2	25	12	2	2									
Oconomowoc.....	80	20	30	70	some	40	yes	63	3	2	6	.....	.....	.....						
Rhineland.....	100	0	90	10	some	2	yes	few	1	1	2	2	2	2									
Shawano.....	100	0	50	50	n	20	yes	50	4	1	1	2	2	2									
Superior.....	60	40	60	40	n	DNS	yes	.....	y	y	y	y	y	y								
Two Rivers.....	100	0	80	20	n	DNS	no	.....	.....	.....	.....	.....	.....	.....		
Waukesha.....	50	50	50	50	y	8	yes	6	.....	.....	.....	.....	.....	.....			
Wausau.....	99	1	50	50	n	DNS	yes	10	1	1	1	1	1	1									

Notes

¹ = But you know, people forget and go back for more. Wish we could sublet burner and service part of job.
² = Oil has never taken well in this locality.
³ = Most oil burner sales made in new homes as part of heating installation. We sublet the oil burner installation with one year free service.
⁴ = Not so much because of the extremely high price of oil.
⁵ = Will be forgotten when oil prices return to normal.
⁶ = Offered, but no sales.
⁷ = In steel furnaces.
⁸ = Gas territory.
⁹ = Coal and gas territory.

When the war stopped private construction for sale, gas heating in many communities served by natural gas or a mixture was enjoying a phenomenal popularity. Winter air conditioning furnaces, gas fired, in small, well-insulated buildings were the choice of many speculative builders. Conversion gas burners had seen ups and downs—but by and large the conversion burner had lost ground to the complete winter air conditioner, probably because of greater efficiency in the complete unit. It is interesting to note, therefore, in the survey which follows, how contractor readers of American Artisan rate the complete gas furnace far ahead of the conversion burner as the popular choice for post-war heating. Even in old houses, the complete unit is ahead of the conversion burner in the estimation of most readers. Gas companies, the survey reveals, are the principal advocates of the conversion burner. Note, also, that in about 75 per cent of the reports, the local gas company is cooperating with installers in the sale of gas equipment—this is a distinct change of attitude from the early 1930's when almost every gas company tried to corner all gas equipment sales.

GAS BURNING EQUIPMENT

State and City	After the War, What Kind of Gas Heating Do You Think Will Be Bought?				Is Your Local Gas Company SELLING Conversion Burners? y = Yes, n = No.	Is Your Local Gas Company COOPERATING or COMPETING With You in New House Sales?		
	Per Cent of Sales							
	New Houses	Old Houses	Complete Gas Furnace Unit	Conversion Gas Burners				
ALABAMA								
Birmingham.....	100	0	80	20	y	.....	
ARIZONA								
Phoenix.....	100	0	60	40	n	Coop.		
Tucson.....	100	0	80	20	n	Coop.		
CALIFORNIA								
Eureka.....	90	10	100	0	n	Coop.		
Martinez.....	100	0	100	0	n	Compete		
Oakland.....	100	0	95	5	y	.....	
CONNECTICUT								
Waterbury.....	100	0	95	5 ¹	y	Both		
ILLINOIS								
Belleville.....	.....	.....	.....	.....	y	Coop.
Chicago.....	95	5	50	50	n	Coop.		
Chicago.....	100	0	75	25	.....²	Neither	
Elmhurst.....	.....	.....	.....	.....	y	.....	
Forest Park.....	100	0	85	15	y	Coop.		
Highland Park.....	.....	.....	.....	.....	n	.....	
Jacksonville.....	95	5	95	5	y	.....	
Kankakee.....	100	0	80	20	n	.....	
Lincoln.....	100	0	80	20	y	Compete		
Mattoon.....	95	5	100	0	n	Coop.		
Moline.....	100	0	60	40	y ³	Compete		
Naperville.....	100	0	100	0	y ³	.....	
Paris.....	75	25	25	75	y	Coop.		
Peoria.....	90	10	90	10	y	Coop.		
Quincy.....	90	10	50	50	n	Coop. ⁴		
Rock Island.....	.....	.....	.....	.....	y	.....	
Wilmette.....	90	10	90	10	y	Coop.		

State and City	After the War, What Kind of Gas Heating Do You Think Will Be Bought?				Is Your Local Gas Company SELLING Conversion Burners? y = Yes, n = No.	Is Your Local Gas Company COOPERATING or COMPETING With You in New House Sales?		
	Per Cent of Sales							
	New Houses		Old Houses					
Complete Gas Furnace Unit	Conversion Gas Burners	Complete Gas Furnace Unit	Conversion Gas Burners					
INDIANA								
Columbus City.....	.....	.....	.....	.....	n	Coop.
Evansville.....	50	50	.....	.....	.....	Coop. ⁵
Fort Wayne.....	98	2	40	60	y	.....	
Fort Wayne.....	80	20	95	5	n	.....	
Fort Wayne.....	100	0	50	50	y	Coop.		
Hammond.....	60	40	60	40	y	.....	
Indianapolis.....	90	10	95	5	n	Coop. ⁶		
Lafayette.....	.....	.....	.....	.....	y	Coop.
La Porte.....	95	5	70	30	n	Coop.		
Marion.....	100	0	80	20	y	Coop.		
Vincennes.....	.....	.....	.....	.....	y	Compete
IOWA								
Cedar Rapids.....	90	10	90	10	y ²	.....	
Davenport.....	95	5	65	35	.....	Compete	
Davenport.....	100	0	90	10	y	Compete		
Marshalltown.....	35	65	25	75	n	.....	
Mason City.....	100	0	90	10	y	Coop. ⁷		
Mason City.....	100	0	80	20	y ³	.....	
Sioux City.....	100	0	100	0	n ⁴	Coop. ⁸		
Sioux City.....	100	0	50	50	y	Coop.		
Spencer.....	50	50	20	80	y	Coop.		
Waterloo.....	80	20	90	10	n	Coop.		
Waterloo.....	100	0	100	0	n	Coop.		
KENTUCKY								
Lexington.....	100	0	75	25	n	Coop.		
Louisville.....	100	0	100	0	n	Coop.		
MASSACHUSETTS								
Boston.....	90	10	60	40	y ⁹	Coop.		
North Scituate.....	100	0	90	10	y ³	.....	
Worcester.....	.....	.....	.....	.....	y	Compete
MICHIGAN								
Ann Arbor.....	50	50	25	75	y	Compete		
Dearborn.....	100	.....	80	20	n	.....	
Detroit.....	100	0	100	0	n	.....	
Detroit.....	100	0	50	50	y	Coop.		
Escanaba.....	.....	.....	.....	.....	n	Coop.
Flint.....	100	0	20	80	.....	(None being sold)	
Flint.....	90	10	50	50	y	Compete		
Grand Rapids.....	.....	.....	25	75	n	Coop.
Highland Park.....	80	20	60	40	n	.....	
Lansing.....	100	0	50	50	y	.....	
Midland.....	100	0	90	10	y	Coop.		
Muskegon.....	90	10	?	?	y	Coop.		
Saginaw.....	90	10	90	10	y	.....	
Saginaw.....	90	10	25	75	y	.....	
MINNESOTA								
Minneapolis.....	100	0	40	60	y	Compete		
MISSOURI								
Joplin.....	100	0	100	0	n	Compete		
Kansas City.....	100	0	85	15	y	Compete		
Kansas City.....	100	0	80	20	y	Both ¹⁰		
St. Louis.....	.....	.....	.....	.....	y	Coop.
St. Louis.....	100	0	75	25	y	Coop.		
St. Louis.....	95	5	75	25	y ¹¹	.....	
MONTANA								
Great Falls.....	100	0	90	10	n	Coop.		
NEBRASKA								
Lincoln.....	99	1	99	1	y	.....	
Lincoln.....	90	10	80	20	y	.....	
North Platte.....	.....	.....	.....	.....	y ¹²	Compete
Omaha.....	65 ¹	35	.....	.....	0	Compete
Omaha.....	100	0	100	0	y	.....	
Omaha.....	100	0	90	10	y	Compete		
Scottsbluff.....	.....	.....	.....	.....	y	Both
NEW HAMPSHIRE								
Manchester.....	90	10	40	60	y	Compete		
NEW JERSEY								
Bogota.....	75	25	20	80	?	Coop.		
Penns Grove.....	100	0	100	0	y	.....	
NEW YORK								
Buffalo.....	95	5	95	5	n	Coop.		
Buffalo.....	.....	.....	.....	.....	n	Coop.
Corning.....	100	0	90	10	n	.....	
Elmira.....	100	0	75	25	n	Coop.		
Newburgh.....	25	75	.....	.....	y	Coop.
Olean.....	90	10	50	50	y	Both		
Rochester.....	100	.....	75	25	y	.....	
Rochester.....	99	1	2	98	n	Coop.		
Rochester.....	95	5	100	0	n	Coop.		
Syracuse.....	85	15	15	85	n	.....	

State and City	After the War, What Kind of Gas Heating Do You Think Will Be Bought?					Is Your Local Gas Company SELLING Conversion Burners? Y = Yes, N = No.	Is Your Local Gas Company COOPERATING or COMPETING With You in New House Sales?		
	Per Cent of Sales								
	New Houses		Old Houses						
Complete Gas Furnace Unit	Conversion Gas Burners	Complete Gas Furnace Unit	Conversion Gas Burners						
OHIO									
Ashland.....	99	1	40	60	y	Coop.	.....	
Barberton.....	90	10	75	25	n	.....	Compete	
Big Prairie.....	100	0	25	75	y	.....	.....
Canton.....	100	0	10	90	y	.....	.....
Cleveland.....	?	?	?	?	n	Coop.	.....	
Cleveland.....	?	?	?	?	y	Coop.	Compete		
Columbus.....	100	....	50	50	y	.....	.....
Columbus.....	95	5	75	25	y	Coop. ¹³	.....	
Columbus.....	100	0	50	50	n	Coop.	.....	
Dayton.....	90	10	80	20	y	Compete	.....	
Dover.....	95	5	95	5	n	Coop.	.....	
Findlay.....	....	....	....	....	y	Compete	.....	
Greenville.....	....	....	....	....	y	Compete	.....	
Lakewood.....	....	....	75	25	y	.....	.....
Mansfield.....	95	5	50	50	n	Coop.	Inactive		
Middletown.....	25	75	10	90	y	Coop.	.....	
Ravenna.....	75	25	75	25	n	Coop.	.....	
Sandusky.....	90	10	40	60	y	.....	.....
Sidney.....	70	30	40	60	y	.....	.....
Springfield.....	50	50	50	50	y	.....	.....
Toledo.....	95	5	50	50	y	Coop.	.....	
Youngstown.....	90	10	60	40	n	Coop.	.....	
OKLAHOMA									
Oklahoma City.....	100	0	100	0	n	Coop.	.....	
Tulsa.....	98	2	98	2	n	Coop.	.....	
PENNSYLVANIA									
Corry.....	....	....	....	....	y	Compete	.....	
Erie.....	80	20	60	40	y	Coop.	.....	
Holidaysburg.....	....	....	....	....	y	Compete	.....	
Latrobe.....	100	0	50	50	....	Coop.	.....	
Meadville.....	60	40	70	30	n	Compete	.....	
Pittsburgh.....	100	0	75	25	y	Coop.	.....	
Pittsburgh.....	100	0	60	40	y	Compete	.....	
Pittsburgh.....	98	2	50	50	y	Both ¹⁴	.....	
Reading.....	....	....	....	....	....	.....	.....
Riversburg.....	50	50	50	50	n	.....	.....
Tarentum.....	90	10	90	10	n	.....	.....
SOUTH DAKOTA									
Rapid City.....	100	0	80	20	....	Coop.	.....	
Yankton.....	100	0	50	50	y	Coop.	.....	
TEXAS									
Dallas.....	100	0	100	0	y	Both	.....	
Fort Worth.....	100	0	25	75	n	Coop.	.....	
Houston.....	100	0	100	0	n	Coop.	.....	
San Antonio.....	100	0	100	0	n	Coop.	.....	
WEST VIRGINIA									
Morgantown.....	100	0	60	40	y	.....	.....
WISCONSIN									
Madison.....	100	0	80	20	y	Coop. ¹⁵	.....	
Milwaukee.....	100	0	80	20	y	Coop.	.....	
Milwaukee.....	95	5	50	50	y	.....	.....
Milwaukee.....	90	10	60	40	y	Both	.....	
Waukesha.....	85	15	80	20	?	.....	.....
WYOMING									
Sheridan.....	80	20	10	90	....	Compete	.....	

Footnotes

¹ = Based on all kinds of heating.
² = Do not sell conversion burners.
³ = Gas company makes all sales.
⁴ = Gas company sells direct, but will cooperate.
⁵ = They say they cooperate!
⁶ = Supposed to cooperate, but recommend special manufacturers or equipment.
⁷ = Local gas company does not sell, but cooperates by advertising gas furnaces.
⁸ = Cooperating 100 per cent with one dealer. Others only when they have to. Conversion burners will run the bills too high with mixed 565 Btu gas.
⁹ = Gas company makes 90 per cent of sales, but contractors make installations.
¹⁰ = Gas company cooperates on service, but competes on installations.
¹¹ = But not too actively.
¹² = Out of 100 gas furnaces sold, there will be one conversion.
¹³ = Only if we handle make of units on which gas company gets a commission.
¹⁴ = They try to sell direct, but if we get the contract, they cooperate.
¹⁵ = We figure register and duct work.

The Register Expectation Under Amended M-126

CONSERVATION ORDER M-126, which controls the production of most civilian articles made of iron and steel, has been amended. Some items previously prohibited are now permitted of iron and steel, and some changes in the materials permitted are made, but in general this amendment to M-126 will not radically affect the products used by our industry.

Perhaps the product which most concerns us is registers and grilles. Under the amended order, registers and grilles may now be made in all labor areas and may be made of first quality steel instead of "top cut or Bessemer" as heretofore. Lest there be some misunderstanding of the effect on quantity, AA has asked manufacturers to make statements on the effect of the amendment. These statements follow and are self-explanatory:

"We feel that the recent amendment to Order M-126 will not immediately release a large volume of registers and grilles. The amount of steel being released to register manufacturers is still very limited and the problem of obtaining sufficient help is still very pressing. The order, undoubtedly, will increase the quality of merchandise, as it has removed the restrictions of the use of 'Bessemer and top cut steel.' This means that commercial grades of steel may now be used. However, manufacture is still subject to allotments under CMP regulations. However, we have been manufacturing registers for some time, as we have not been located in a critical labor area and have not been adversely affected by the limitations of M-126."

ROBERT L. LEIGH, President,
Air Control Products, Inc.



"We were authorized early in July to manufacture and assemble carbon steel sheets, plates, and angle iron into heating and ventilating registers and grilles (Plain Lattice Type) from idle and excess material provided it would not interfere with our war production orders. On this account, we have been manufacturing grilles since that date. We do not feel that we will receive much increased production in the fourth quarter or in 1945 unless building construction is authorized."

W. M. POWELL, President,
Diamond Manufacturing Co.



"Amendment of M-126 does not increase the production of registers and grilles at the present time because we are limited in the amount of material which is available and also the manpower. Until the restrictions are lifted so that more material is available and also more manpower, we cannot increase our output."

B. N. RICHARDSON, President,
The Independent Register Co.



"We do not expect the amendment of M-126 to make any great change in our operations during the balance of 1944. Our position has been different from that of most register manufacturers in that Holland, Michigan, is located in a non-critical labor area and we have been producing registers in fair volume during the last several months. The amount of steel which we are permitted to receive will continue to control our operations. We def-

initely will increase our production of registers and furnace accessories in the 4th quarter of 1944 over earlier quarters, but we do not expect our production to be greatly in excess of anticipated requirements. So far as 1945 goes, we feel it is too early to make any sound prediction as to the volume of registers available as conditions are expected to change materially between now and 1945. It is reasonable to assume, however, that this supply of registers in the 1st quarter of 1945 will be far in excess of the first quarter of 1944."

E. S. Johnson, Secretary,
Hart & Cooley Manufacturing Co.



"We do not see how M-126 amended can cause any great boom in the manufacture of registers. Registers always could be manufactured in certain areas on a priority (still required), but before the amendment registers had to be manufactured (with certain exceptions) from Bessemer or 'top cut' steel. The relief to the industry in the amendment to M-126 is that registers need no longer be manufactured from these inferior grades of steel. This practice was wasteful, the material at times hard to obtain, and for certain operations difficult to shape. This change will not add a single register to the demands of consumers, but certainly removes a great annoyance and handicap from the manufacturers. In the case of grilles, there may be some slight increase, since manufacture of these was previously forbidden, with certain exceptions. However, the early substitutes such as Masonite became even harder to get than steel and for some time special appeals to the W. P. B. to allow manufacture of grilles as a rule have been allowed. Hence the only effect of amendment to M-126 on the grille business is elimination of red tape and delays. Ornamental grilles-ornamental as to design or use are still forbidden and should be so long as steel or manpower are at all tight."

FRANK T. BAILEY, Vice President,
Register & Grille Mfg. Co.



"It is our opinion that, first, there should be improvement in the quality through ability to purchase cold rolled sheets and better grades of material as was used prior to the M-126 restrictions. As the release was received midway of the third quarter, the ability to produce will be governed by the ability to obtain necessary better grade materials from jobber's stocks immediately to get into manufacture. Owing to this reason and the lack of manpower, the production of registers for the 1944 season will not be in greater quantity than to reasonably take care of maintenance and repair business and nominal stock replacement."

S. P. BURGESS,
Rock Island Register Co.



"The revision in Order M-126 which removes registers and grilles from List A will not enable us to increase our production on this line. This is due to the fact that we are located in a critical labor shortage area so that all of our applications for materials are reviewed by the WMC. In other words, our production is very rigidly controlled, and while it appears that the labor situation is improving, we do not anticipate any great change in the near future. The labor situation in our plant is very serious, so we do

(Continued on Page 117)

The Effect of Dirty Air Filters on the Performance of a Winter A. C. Unit

By Dean L. Hunzicker
Research Products Corp., Madison, Wis.

(1) Operating a warm air furnace equipped with dirty filters decreases the heat output capacity of the furnace as much as 25% of rated output.

(2) Operating a warm air furnace equipped with dirty filters reduces the air volume circulated 20 to 25%.

(3) On continuous burner operation, the efficiency of heat output of the furnace remained constant at 69% when the filter resistance was increased.

(4) With the burners operating intermittently, the efficiency was 78% with clean filters and dropped to 73% with dirty filters in the unit.

(5) With clean filters and burners operating intermittently, the cost per unit B.T.U. output is X . With dirty filters and burners operating intermittently, the cost per unit B.T.U. output is $1.07X$. With clean or dirty filters and burners operating continuously, the cost per unit B.T.U. output is $1.13X$.

THE unit used in the tests is equipped with a blower having a capacity of from 375 to 1,050 C.F.M. according to data sheets. The blower speed was adjusted so the blower delivered approximately 500 C.F.M. with clean filters installed at a .2" bonnet pressure. The unit was equipped with 2-16"x25"x2 Air Filters which had 4.62 square ft. of net filter area. The velocity of air flow through the filter media was therefore 108 F.P.M. The unit has ample filter area and consequently will not require frequent filter changes.

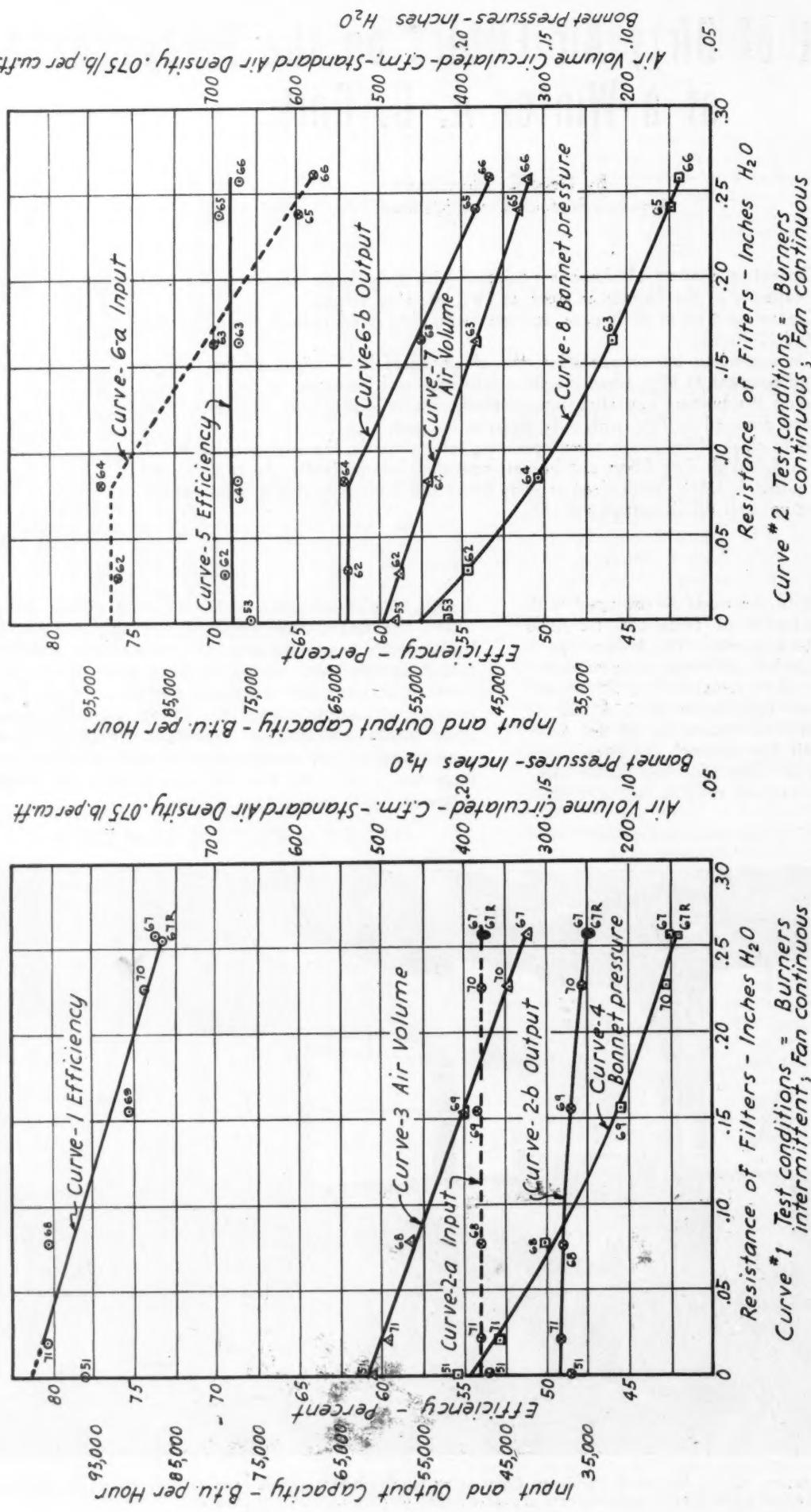
The filters used in these tests were cardboard

frame 16"x25"x2" filters. In order to obtain dirty filters, the filters were placed in the unit and cotton linters were introduced into the intake air stream. The cotton linters were placed in an 8 mesh sieve and brushed through the sieve into the air stream. This method of feeding coated the filters uniformly over their intake surfaces. At intervals the filters were removed and their restriction was checked in the air filter test apparatus. The filters were built up to the following resistance in sets of two:

.054" H₂O at 200 F.P.M. Clean Filters



Test set-up in the laboratory of the Research Products Corp. on which the investigation reported here was run. Results are for a gas-fired furnace—tests are now under way on an oil-fired furnace.



Curve sheets No. 1 and No. 2 show clearly what happens when filters become loaded with dirt. This article omits the description of the test procedure. Briefly, the furnace was adjusted to deliver the equivalent of 90,000 Btu's with continuous burner operation. The damper in the air outlet pipe was set so that with clean filters the bonnet resistance was .2 inches H₂O. Smoke pipe draft was set at .2 inches H₂O. The results are shown in the two charts above.

Curve #1 Test conditions = Burners continuous; Fan intermittent

Curve #2 Test conditions = Burners continuous; Fan continuous

.083" H₂O at 200 F.P.M.
 .200" H₂O at 200 F.P.M.
 .350" H₂O at 200 F.P.M.
 .550" H₂O at 200 F.P.M.

These filters were placed in the unit for the different tests.

Due to the fact that the air velocities were relatively low through the filters, the unit was also tested with one filter space blocked off with cardboard and only one of the above filters was placed in the unit. By this method the filter resistance covered a wider range of values.

In order to obtain the desired data, 71 furnace tests were run. During the first 33 tests the unit was allowed to operate for fifteen minutes before the test was started. This was found to be the wrong procedure because with different air volumes circulating, due to the dirty filters, the amount of heat in the furnace at the beginning of the tests was different for all tests. To compensate for this, all tests were started when the outlet air temperature was 175° F. It may be argued that at each different resistance of air filters a new equilibrium temperature should be established and the tests should start when that temperature is reached. Such a condition can not be established if dirty filters are installed because the temperature will continue to rise until the limit switch cuts off the burners.

It was discovered that the limit switch did not always cut out the burners at the same temperature. This condition was remedied by placing a radiant heat baffle around the limit switch helical coil in the bonnet of the furnace.

It was found that it was important to check carefully the draft in the smoke pipe. Adjustments had to be made to maintain a draft of approximately .2" H₂O. The balancing damper was a very great asset in obtaining uniform combustion.

The average CO₂ was maintained at approximately 14% and the flue gas temperature stayed within a range of 514-544 degrees Fahrenheit for continuous operation and from 416-457 degrees on intermittent operation of the furnace.

The controlled tests that were plotted are numbered 51-55, and 62-71 inclusive.

Discussion of Five Items Shown in Sub-title

(1) The heat input and output of the warm air furnace with filters of various resistances installed with continuous operation of the burners, unless turned off by the limit switch, are shown on curve sheet No. 2. When the filters are clean the furnace will burn a quantity of gas equivalent to 90,000 B.T.U. per hour; while, with dirty filters, the burners will burn only 70,000 B.T.U. per hour. The output capacity dropped from 64,000 B.T.U. per hour to 47,500 B.T.U. per hour or a drop of 16,500 B.T.U. per hour. This is a decrease of 25% of the rated output.

The furnace tested is rated to burn 90,000 B.T.U. per hour when the burners are on continuously. When the filters in a furnace become plugged the air flow through the unit is decreased due to the increased pressure head against which the blower has to operate. Decreasing the air volume causes the air temperature in the bonnet to increase. This temperature increase, in turn, causes the outlet air temperature to rise. As the filters become dirty the bonnet temperature increases to 250° F. at which temperature the limit switch located in the bonnet automatically turns off the burners. The burners remain off until the

circulating air cools the bonnet below 250° F. This is, in one sense, a safety feature which prevents the temperature from rising beyond safe limits and injuring the furnace. In another sense, however, the limit switch cuts the burners off so the efficiency of furnace operation will be within certain limits and excess heat will not be sent up the flue.

The limit switch, while maintaining a high efficiency, reduces the amount of gas that can be burned in an hour. On a cold winter day, when the full capacity of the heating equipment is required, it would be impossible to heat the house with dirty filters installed because the burners would only burn gas equivalent to 70,000 B.T.U. per hour instead of 90,000.

(2) The air volume circulated by the blower decreases in straight line relation to the increase in filter resistance. The decrease in the air volume is illustrated on curve sheet No. 1 for intermittent operation. The values for clean filters are from 425 C.F.M. to 500 C. F. M., while extremely dirty filters allow a flow of only 325 C.F.M. This is a reduction of air volume of approximately 23.5%. The values of air volume are all slightly greater for intermittent operation than they are for continuous operation because the average air outlet temperature is lower and its specific volume is smaller. Corresponding with this, the values of bonnet pressure for intermittent burner operation are lower for all values because the specific volume of outlet air is less and the actual C.F.M. at the outlet air temperature are less, which causes the actual bonnet pressure to be less.

Decreasing the air volume by having dirty filters in a warm air furnace will also cause poor air distribution in the rooms to be heated because the throw of the grille is directly proportional to the quantity of air output of the grille. Decreasing the throw would mean that there would be cold spots in the room.

(3) The efficiency of operation of the warm air furnace is one of the main criteria upon which furnace performance is based. The efficiency of the warm air furnace with burners operating continuously is a constant at approximately 69% as illustrated on curve sheet No. 2. The efficiency on continuous operation is a straight line because the limit switch turns the burners off when the bonnet temperature is 250° F.

(4) Curve sheet No. 1 illustrates the decrease of furnace efficiency with an increase in filter resistance with intermittent operation of the furnace. The decrease is from 78% with clean filters to 73% with dirty filters.

(5) If cost per unit B.T.U. output of a furnace operating with clean filters and burners operating intermittently is X then the relative cost for gas can be expressed for the various operating conditions as follows:

(a) Operating intermittently ("on-off") and with dirty filters, the furnace efficiency is 73%. The ratio of efficiencies to cost per unit B.T.U. output is therefore:

$$\begin{aligned} 78 \\ - = 1.07X \\ 73 \end{aligned}$$

(b) Operating continuously ("on") either with clean or dirty filters, the furnace efficiency is 69%. The ratio of efficiencies to cost per unit B.T.U. output is therefore:

$$\begin{aligned} 78 \\ - = 1.13X \\ 69 \end{aligned}$$

(Continued on page 118)

*Perhaps some of your
customers would like one of these*

Suggested Fuel Savings Report

By E. F. Fuller

WHEN the heating contractor is asked to submit to an owner recommendations showing how fuel may be saved, it frequently happens that a report made in duplicate simplifies matters by providing one copy for the owner and another for the contractor's files. Knowing how much fuel oil will be available, the owner may then select the necessary and possible fuel saving measures to meet his shortage or he may decide to buy all measures and the contractor, having made the calculations, can then use the report when the owner decides what he wants to buy. For complete reference, the contractor may attach to his office copy of the report his calculations so that if several weeks intervene between estimate and order the work will not have to be recalculated. The following data are a sample of such a report.

To deal with this matter in a systematic and intelligent manner, it is first necessary to make a heating survey of the building that is to be heated. Second; we must determine the various changes and additions that might be made to reduce unnecessary heat wastage, such as (a) Insulation, (b) Storm Sash, (c) Weather Stripping, (d) Just what rooms or space may be cut off, unheated for the heating season, without too great a hardship to owners. Third: We must make careful inspection of the heating plant, viz: (a) Is the plant properly sized. (b) Does it need cleaning. (c) Is there excessive heat wastage in the design of the heating plant. (d) Is the chimney draft excessive. (e) Are flue gases unnecessarily hot, etc. Fourth: We must inspect the heat delivery system: viz: (a) Are ducts or pipes of proper size. (b) Is circulation by blower or gravity. (c) Is the circulation properly balanced. (d) Are registers or radiators in each room properly sized. Fifth: We must balance the heat

value of the fuel consumed against the seasonal heat demand of the building to determine the overall efficiency of the heating system.

The accompanying photograph and floor plans show a 20-year-old residence for which such a report was calculated and submitted.

Typical Report to Owner

If the original building is heated to 70 F., in all rooms, for an entire normal heating season, the estimated fuel consumption should be—

4653 gals. fuel oil @ 7.7c = \$358.28, or 30
tons coal @ \$12.00 = \$360.00

This certifies the following precautions can be taken by the owner of this building to save fuel for defense in the heated part of this building:

(1) The addition of storm windows saving	12,300 Btu's
(2) The addition of storm sash, reducing the amount of cold air filtering through cracks around windows, showing a saving of	10,200 Btu's
(3) The ceilings of the second story heated rooms insulated with 4 inches of Rock Wool, saving	19,100 Btu's
(4) A saving in fuel may be accomplished by not heating certain rooms, as indicated on sketch herewith, saving	49,500 Btu's
 Total saving for defense.....	91,100 Btu's

The present maximum heat demand for heated rooms amounts to.... 102,800 Btu's
The total MHD for the entire building is

193,900 Btu's

To heat the entire building to 70 degrees Fahrenheit for an entire heating season should require:

4653 gals. fuel oil @ 7.7 = \$358.28, or 30
tons coal @ 12.00 = \$360.00

Cost for heating less items 1 to 4 inclusive:

2467 gals. fuel oil @ 7.7 = \$189.96, or 16 tons
coal @ \$12.00 = \$192.00

Savings for defense:

2186 gals fuel oil @ 7.7 = \$168.32, or 14 tons
coal @ \$12.00 = \$168.00.

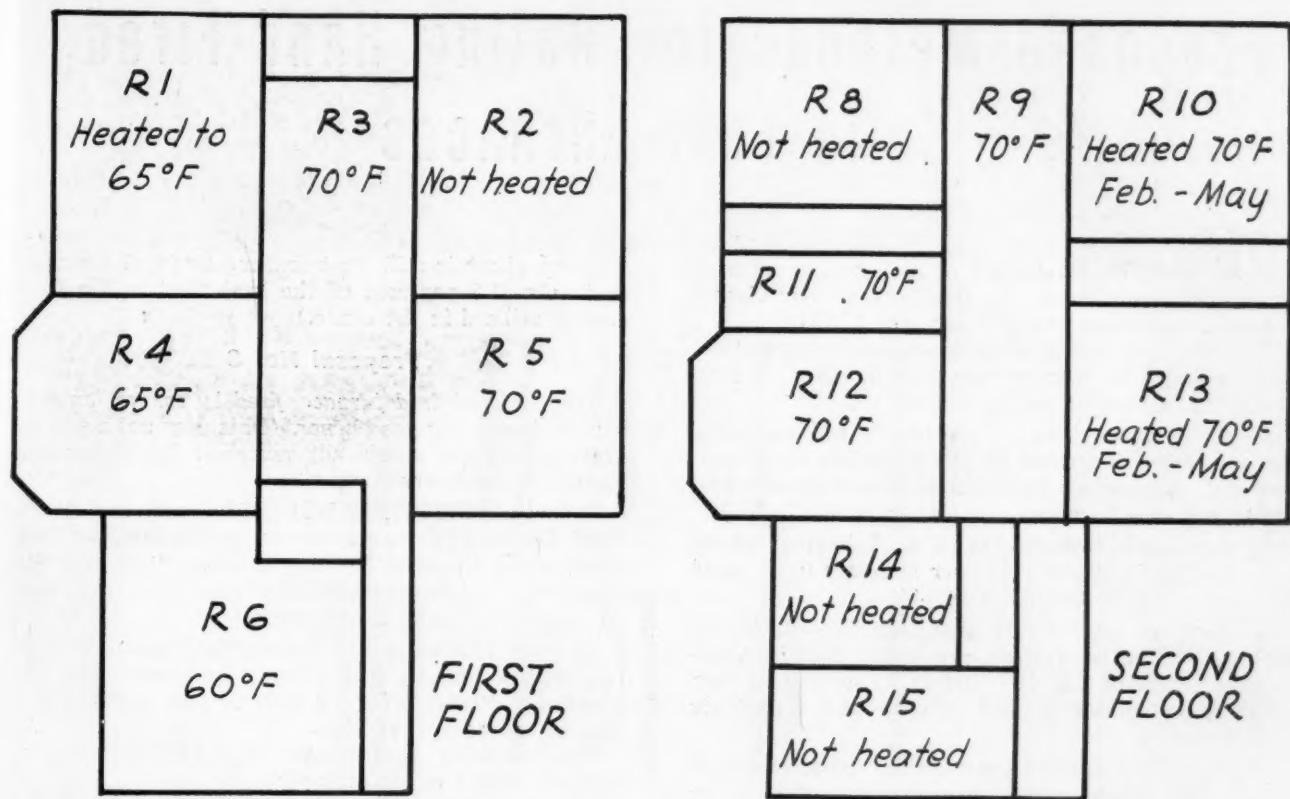
It is recommended that:

- (1) Sooty deposits on inside walls of furnace be cleaned.
- (2) Oil burner be adjusted to 8 per cent CO₂.
- (3) That present oversize firebox be built smaller.

Estimated savings: 2467 gals, \$198.96; less 15 per cent: 369 gals, \$28.41 annual savings for normal season.



Twenty-year-old house for which report was calculated and submitted. Floor plans on following page.



It is recommended that storm sash be added to south window of Room 1 and to east window of Room 4.

If the doors between Room 1 and the hall, Room 3, are closed during the cold weather, greater heating comfort will result for this room. In this event a slight change may become necessary in the cold air returns in hall.

The conversion of this heating system from gravity to forced air circulation would be valuable in order to maintain a more uniform temperature in the heated rooms, reduce stratification, and give the occupants greater heating comfort.

To improve the quality and add moisture to the hot dry indoor winter air, it is recommended that an automatic drip humidifier be placed in the dome of the furnace.

The heating capacity of the present warm air furnace is not adequate to heat the entire building under present heat wastage conditions.

By adding a full 4 inches of Rock Wool, or other approved insulation, between studding of outside walls, installing tight fitting storm windows in present unheated rooms and the conversion of gravity flow to a forced air circulation system, by the addition of a blower, with a few changes in the cold air returns and warm air ducts, the present furnace would heat the entire building.

An additional saving might be made by the installation of a modern furnace burner unit that will have an overall efficiency of 80 per cent or better.

Present furnace: 60% efficient, 2467 gals. @
7.7c = \$189.96 (normal season)

New furnace: 80% efficient, 1850 gals. @
7.7c = \$142.46

Savings for defense (617 gals), \$47.50

It will be noted in the above that item 4 shows fuel saving by closing off rooms. On this particular job the saving was calculated on the basis of 32 degrees prevailing in the unheated rooms and this brings up

an interesting point, important to contractors working in the cold northern states.

The assumption of 32 F for maximum low temperature in unheated rooms was made to save excessive calculation, and for the most part this assumption works out satisfactorily.

But in this survey, should a temperature of 16 F be assumed, it would add 16 degrees to the temperature difference between heated and unheated rooms and, in this example, the maximum heat demand of the building would be three per cent greater; however, this would not in any manner change the fuel savings calculation, as this is based on the actual number of gallons of fuel oil consumed.

Should it become desirable to make a more accurate calculation of each room separately, a comparison of Room 5, heated to 70 F, with unheated Room 13, on second floor over 5, can be made in the following manner:

Room 5—

Glass (S.S.)	42x63.....	=2.7
Wall	243x21.....	=5.1
Infil.	40x51.....	=2.0
Inside wall	140x13.....	=1.8

Total 11.6

Room 13, over Room 5, 2nd floor—

Glass (S)	42x84.....	=3.5
Wall	251x21.....	=5.3
Infil.	40x59.....	=2.4
Ceil. (ins.)	210x 6.....	=1.2

Total 12.4

12,400 Btu's would be required to heat this room to 70F. (Room is now shut off.)

Infiltration through inside walls (lath and plaster on two sides of studs), factor .32 x 84 = 27

Infiltration through floor (lath and plaster,
(Continued on page 128)

Proposed Methods for Rating Hand-Fired, Solid Fuel Furnaces

FOllowing method of rating to be adopted by the National Warm Air Heating and Air Conditioning Association, effective January 1, 1945.

The following rating codes now in existence and actually adopted by industry are still in effect, and no change in method of rating is proposed.

a. All furnaces designed specifically for gas burning are tested and rated by the American Gas Association Laboratories. This applies to both gravity and forced air type furnaces.

b. Forced-air furnaces, hand fired, having bonnet capacities up to 80,000 B.t.u. per hour are to be rated by Commercial Standard CS 109-44.

c. Furnaces, specifically designed for vaporizing type oil burning equipment, are to be rated by Commercial Standard CS (E) 104-43. This testing and rating code applies to both gravity and forced air type furnaces.

d. Forced air furnaces, specifically designed for oil burning equipment, are to be tested and rated in accordance with the Tentative Oil Burning Test Code of the Association. (Both test codes under items c and d are subject to revision, and it is hoped that one method of rating and testing will apply to all oil burning furnaces, regardless of type of oil burner used. Some progress is being made in this direction.)

3. The following changes in method of rating are proposed. ONLY FURNACES DESIGNED FOR HAND FIRING OF SOLID FUELS are involved.

Proposal No. 1

Gravity Hand-fired Furnace—The official and well recognized method of rating gravity, hand-fired furnaces is in terms of square inches of leader pipe. The term is ambiguous and every effort should be made to replace it with a rating expressed in terms of "B.t.u. per hour."

Furnaces which have been measured and rated by the Association will not change the official leader pipe rating. However, the Codes Committee urgently recommends that leader pipe ratings be gradually dropped from sales literature.

Proposal No. 2

Gravity Hand-fired Furnace—On and after January 1, 1945, all gravity hand-fired furnaces are to be rated in terms of "B.t.u. per hour bonnet capacity" and "B.t.u. per hour Register Delivery."

The rating formula, based on physical dimensions of the furnace, is as follows:

Register Delivery (Btu/hr)=275 G (1+0.02 (R-20))

Bonnet Capacity (Btu/hr)=367 G (1+0.02 (R-20)) in which G is grate area in sq. in. and R is the ratio of heating surface to grate area.

(This rating formula is substantially the same as that proposed by the Research Staff some 20 years ago and can be substantiated by all test data obtained in laboratory and residence tests. A factor of safety of the order of 13.4 per cent that was in the original Standard Code Rating has been eliminated. The rating

as given above is still most conservative and assumes that only 41.3 per cent of the heat fired in the furnace is utilized in the house.)

Proposal No. 3

Gravity hand-fired furnace, fired by conversion stoker, oil burner, or gas burner. (This does not apply to gravity furnaces specifically designed for stoker, oil burner or gas burner only.)

Both the REGISTER DELIVERY and the BONNET CAPACITY ratings are to be the same as that given under Proposal No. 2. (In other words, the delivery and capacity ratings of a gravity furnace are to remain the same for all fuels.)

In order to take care of the higher furnace efficiencies with automatic fuel burning equipment, the approximate FUEL INPUTS will be less than in the case of the hand fired plant.

The following approximate heat INPUTS to the furnace should be maintained:

a. Stoker heat input is to be $2.05 \times$ register delivery in B.t.u. per hour.

b. Oil burner heat input is to be $1.9 \times$ register delivery in B.t.u. per hour.

c. Gas burner heat input is to be $1.78 \times$ register delivery in B.t.u. per hour.

(A duct transmission efficiency of 75 per cent was assumed for all three cases. Bonnet efficiencies of 65 per cent, 70 per cent and 75 per cent were assumed for cases a, b, and c, respectively.)

Proposal No. 4

Forced-air Hand-fired Furnaces (not including those covered in CS 109-44).

The recommended rating equation given in the existing TECHNICAL Code is to be retained and officially adopted for hand-fired, forced-air furnaces that do not come within the province of the Commercial Standard 109-44 requirements.

The rating formula, based on physical dimensions of the furnace is as follows:

Register Delivery (Btu/hr)=345 G (1+0.02 (R-20))

Bonnet Capacity (Btu/hr)=406 G (1+0.02 (R-20)) in which G is grate area in sq. in. and R is the ratio of heating surface to grate area.

Proposal No. 5

Forced air hand-fired furnace, fired by conversion stoker, oil burner or gas burner. (This does not apply to forced air furnaces specifically designed for stoker, oil burner, or gas burner.)

Both the REGISTER DELIVERY and the BONNET CAPACITY ratings are to be the same as those given under PROPOSAL No. 4.

The following approximate heat inputs should be maintained:

a. Stoker heat input is to be $1.81 \times$ register delivery in B.t.u. per hour.

b. Oil burner heat input is to be $1.68 \times$ register delivery in B.t.u. per hour.

(Continued on page 130)

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Critical Construction Materials Design Guide

Construction in general is controlled by WPB Conservation Order L-41 and by "Construction Limitations," which tell what can be built, what materials may be used, and how much may be spent. The following Guide explains the circumstances under which metal may be permitted to fabricate some of the items this industry normally supplies of steel, copper, tin, zinc.

THIS Guide has been prepared as a supplement to the Construction Limitations and concerns those projects included under Item (c) above. The information contained herein also should be helpful on other types of construction work.

As an aid to those who *must* build today, this Guide has been prepared. It should be of assistance in effecting designs complying with the intent of the Directive for War-Time Construction and also assist in "getting built" authorized projects.

Steel Sheet and Strip

Limited allotments of steel sheet and strip are made periodically directly to the manufacturers of sheet metal items. Except as specifically prohibited in the Construction Limitations, builders are free to use these items to the extent available from this limited manufacture. However, builders are expected to utilize products made from less critical material as far as it is practicable to do so.

When an applicant can justify the use of SHEET METAL FLOORING where heat resistance and light weight, etc., are necessary, it may be approved, *Provided, however, That the gauge of metal is reduced to the minimum. Where such flooring must be self-supporting, it shall be made from formed sheets. There is no prohibition on the use of open type steel grid flooring where its use is essential.*

Exceptions to the acquisition of PORTABLE BUILDINGS made of sheet steel may be authorized only when such buildings are available in completely fabricated form and were not made in violation of WPB Order M-126.

Only in extreme cases will exceptions be granted for the use of METAL SIDING since non-metallic materials (other than wood) such as cement-asbestos, laid-up masonry, etc., are usually available for this purpose.

Waivers on the use of METAL ROOFING (corrugated or other formed sections) may be given when necessary for heat resistance or for reducing the weight on roofs with spans in excess of 60 feet.

SCUPPERS built of sheet metal will only be approved when it can be shown that those built of cast iron or nonmetallic materials cannot be satisfactorily employed.

Relief from the restriction on the use of SMOKE STACKS built of sheet metal will only be given when the weight of the metal required for a breeching connecting the boiler or boilers with a masonry stack is greater than the weight of metal required to build a steel stack or stacks.

Waivers to permit the installation of TERMITE SHIELDS heavier than No. 24 U. S. gauge will not be given in view of the fact that termite shields are normally not heavier than that which is now permitted by the Construction Limitations.

Waivers for the installation of sheet metal straight runs in VENTILATING AND HEATING DUCTS will only be given where it is indicated that the chemical or moisture content of the air or that the pressure or vacuum of air maintained in the duct system is such that cement asbestos or other substitute ducts are not practicable. In granting such waivers, the applicant will be required to utilize the lightest gauges of sheets, in combination, where necessary, with steel shapes for reinforcement.

Copper

Generally, no waivers to the restriction on the use of copper will be granted. In such cases where the reviewing office considers the applicant's request justified, it must refer the case to the Copper Division of the War Production Board in Washington, D. C., for concurrence before authorization can be issued except:

1. That waivers may be permitted by the reviewing office for the installation of:
 - a. Access panels.
 - b. Drip pans.
 - c. Fence and gates.
 - d. Gravel stops and snow guards.
 - e. Grilles, grids and gratings.
 - f. Radiators, shields and covers.
 - g. Weatherstripping.

Provided the materials in these items are fully fabricated and are available from frozen inventories in the form in which installation is to be made without further fabrication.

Tin and Zinc

Generally, no waivers to the restrictions on the use of these metals will be granted. Where the reviewing office considers an applicant's request for waiver justified, it must refer the matter to the Washington Office of the War Production Board for concurrence before a waiver can be granted.

Plumbing, Heating and Electrical Work

Plumbing, Heating and Electrical Work shall be reduced to bare essentials. However, heating systems should include such auxiliary or control equipment and other heating devices as may be reasonably necessary to conserve fuel, which today is a very critical item.

Designs of Wood Working Machinery Hoods

This text and the four plates are reproduced from "Standard Practice in Sheet Metal Work"—now out of print—by permission of Mr. George Harms, Peoria, Illinois. This material is intended to supplement design data in "Correct Practice in Industrial Sheet Metal Work," published by American Artisan.

AS different types of wood working machinery of a similar kind require a special design of hood to suit the machine, it is impossible to give specific designs for all conditions. However, the hoods presented here are typical and may be used as a basis to meet any condition.

In designing the hoods, it is essential to study each machine under operation; to observe how the knives throw the chips; to seek to enclose the knives amply, allowing a free air suction equal to the pipe area; to have the hood follow the flight of chips; to satisfy the machine operator; to keep the hood out of the operator's way; to strengthen the hood with a band iron stiffener and to provide wind gates where machines are used intermittently.

Moulding Machine Hoods

In Fig. 54, Plate No. 26, is presented a molding machine, showing the positions occupied by the hoods for this machine. The five different shaped hoods on this machine are each equipped with a wind gate so that the hoods may be closed at any part of the machine not in operation.

The more common types of wood working machines are the sizer, the planer to cut timber to proper sizes; the molder, for making moldings of all shapes; the sticker, the same as a molder and used to make quarter rounds; the matcher, a high speed planer; the jointer, for planing surfaces for joining together different pieces of wood; the shaper, for grooving straight or curved wood; the saws, cross cut, rip and band saws; sanders, belt, disc or drum type for finishing.

In most wood working machines there is a difference between standard and high speed equipment. Some of the high speed machines run upward of 300 ft. of lumber per minute, which provides a large amount of shavings to be removed as fast as created. Fig. 55 illustrates some of the more common forms of hoods used on molder and stick machines. The hood *A* is similar to a square to round transition while *B* is made adjustable and can be shifted and *C* is a stationary hood for the light side of a sticker. The hood *D* is for the top head of sticker and may be designed in many different ways; *E* is a hood for the irregular molder and *F* for a larger planer where the hood is made adjustable to suit work. These hoods are designed to follow the flight of chips produced by the revolving knives utilizing that force to drive the refuse into the air currents of the exhaust system. It should be noted how the hoods are

built or attached around knives, the edges reinforced with band iron, the gradual changes in direction and that the hoods must not inconvenience the operator.

Miscellaneous Cutting Hoods

Fig. 56, Plate No. 27, illustrates numerous other hoods used on various machines. Some of the modern machines have hoods built as part of the machine which require only a round or oval pipe to connect the collar. Others require two hoods for each set of knives, as indicated in *A*, *B*, and *F* to carry off the refuse created. Additional single hoods are shown at *C*, *D*, *E*, *G*, *H*, and *I*. Many hoods are provided with slip joints, as at *J*, for raising and lowering the hoods and also to allow rapid removal of hood or pipe.

Shaper Hoods

Fig. 57, Plate No. 28, shows a typical shaper hood and piping arrangement in which a slip joint is provided to allow the hood to swing in any direction and around the knives. The hood itself is made with square corners; otherwise the piping is round. Side wing plates are hinged for adjustment by the operator.

Fig. 58 is another design of shaper hood and in fact, many other designs are used, all for the purpose of removing shavings without interfering with the machine operator's work. Instead of slip joints, ball joints are frequently used to provide the swing needed. A standard cast iron ball joint is shown on Plate No. 31. Two such joints are required—one near the hood, the other near the ceiling. These are especially serviceable in mills having high ceilings, but on moderately low ceilings, hood of Fig. 57 is preferred.

In the construction of the hoods for all such machines, it is essential to use nothing lighter than 20 gauge galvanized iron; to place lugged laps outside to provide a smooth internal surface to solder all rivets and lugs securely and to make all work square, neat and durable.

Saw hoods require special study with each type of machine, and must be designed with due regard to the "throw" of sawdust from the wheel. The air currents are piped to form an extension of the stream of sawdust thrown off by the saw. Thus the hood presented in Fig. 59 shows a simple design for a rip saw hood. Owing to the frame work under the saw table and other obstructions, the outline as shown is

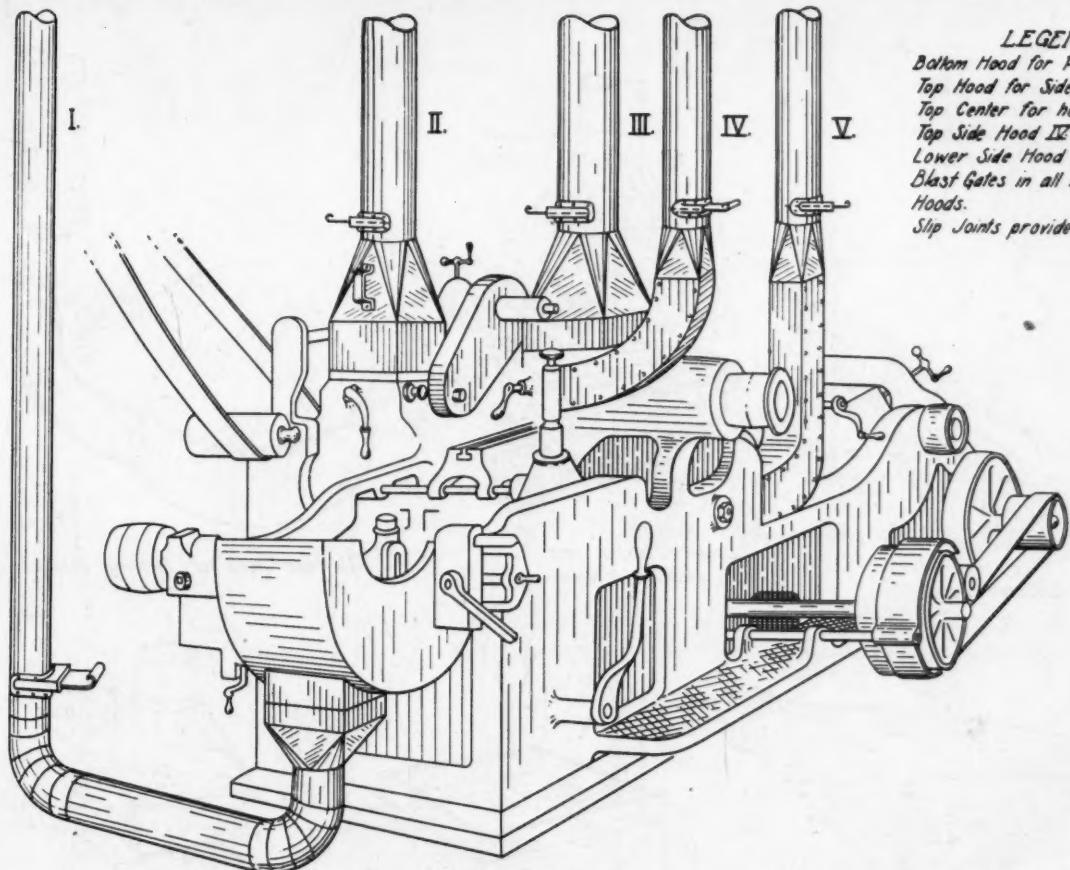


Fig. 54. MOULDING MACHINE WITH HOODS AND BRANCH PIPE.

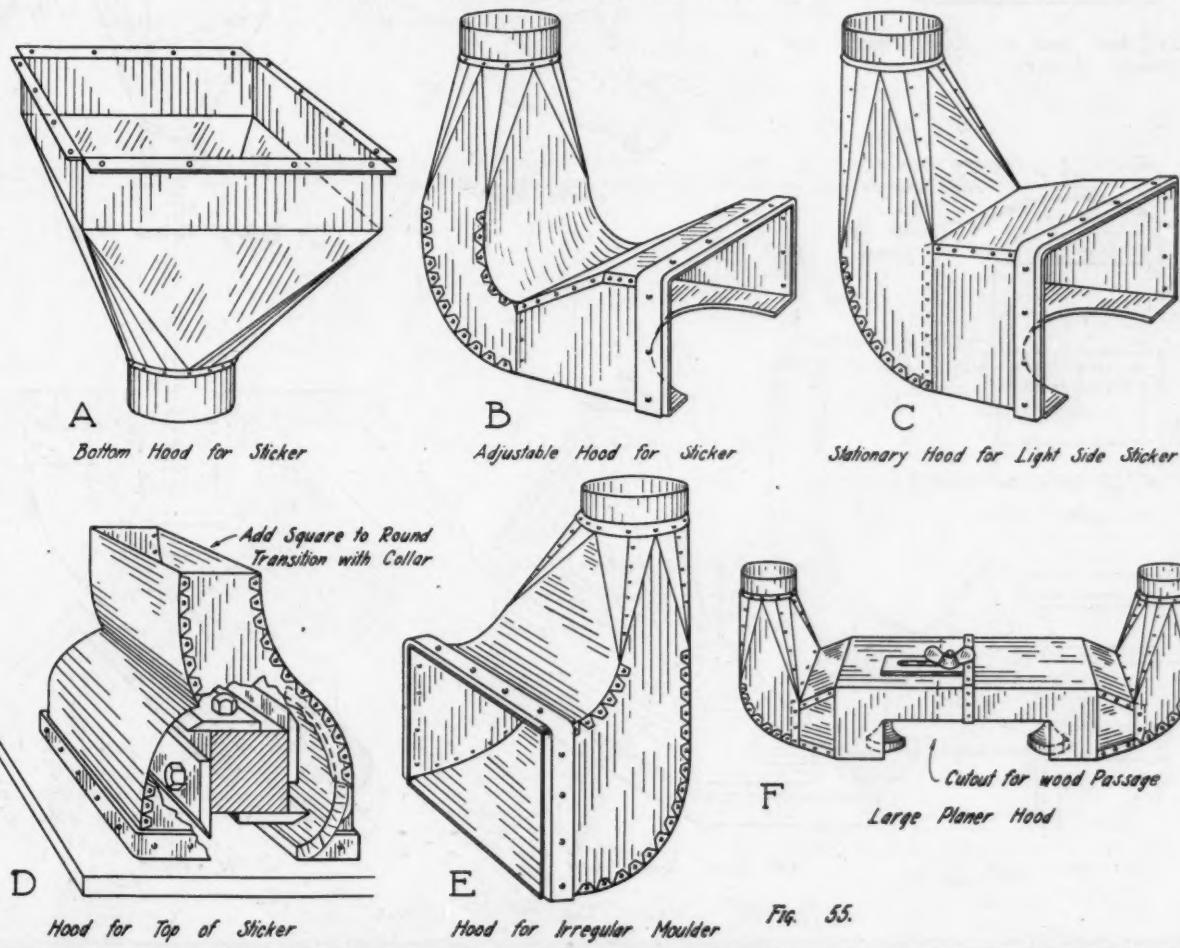


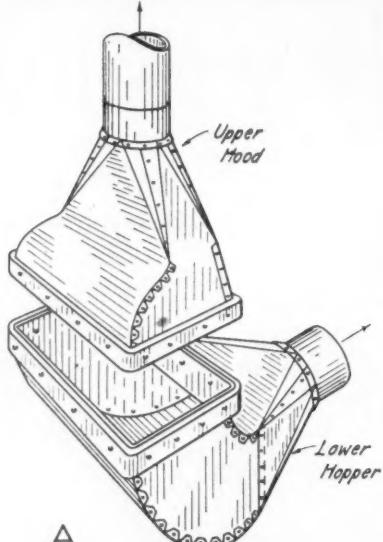
Fig. 55.

TRADE DEVELOPMENT
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SHEET METAL CONTRACTORS

TYPICAL DESIGN OF HOODS FOR
STICKERS, MOULDERS AND PLANERS

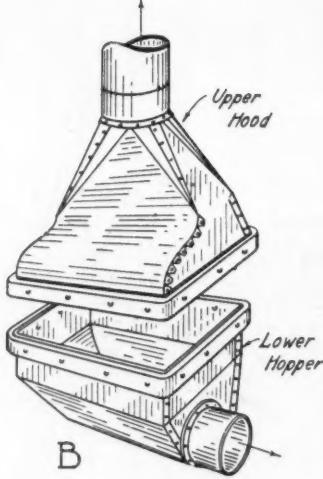
PLATE
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26

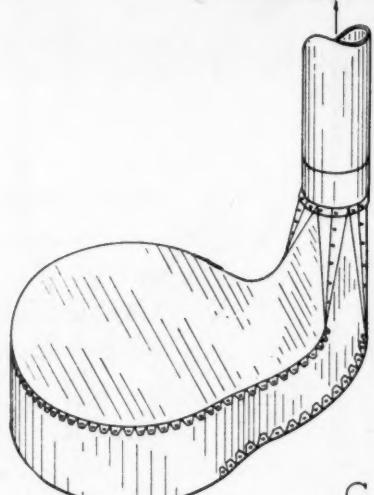


A

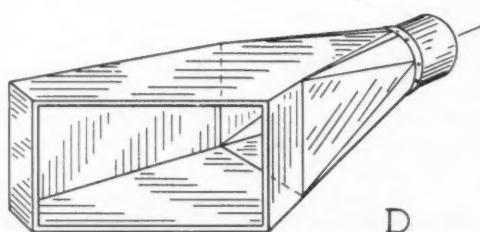
Double Surfer Hoods



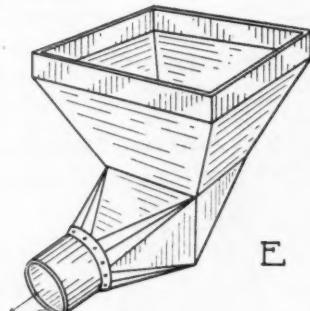
Double Matcher and
Flooring Machine Hoods



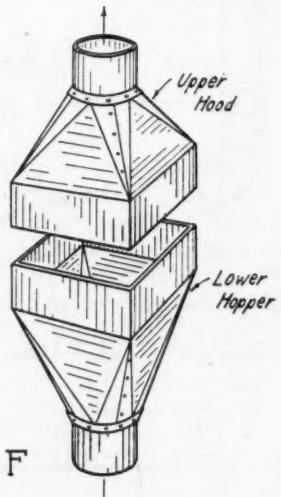
Right-hand Hood of Flooring Machine



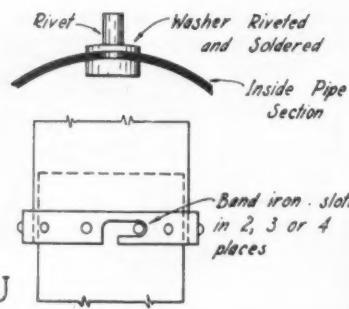
Left-hand Hood for Double Matcher and
Flooring Machine



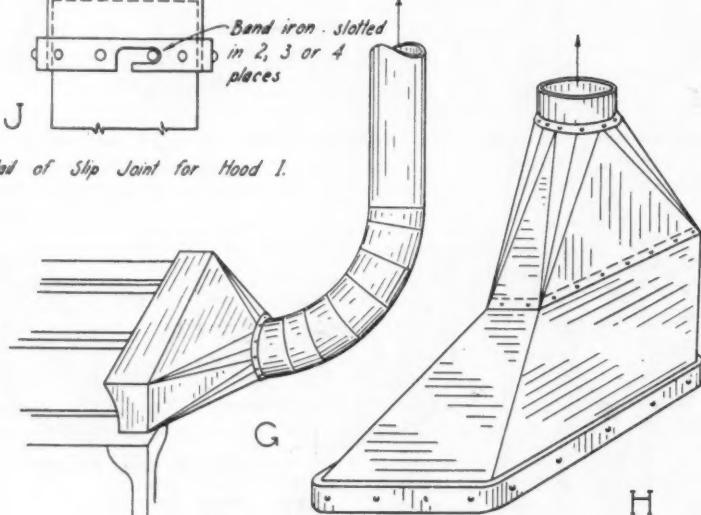
E



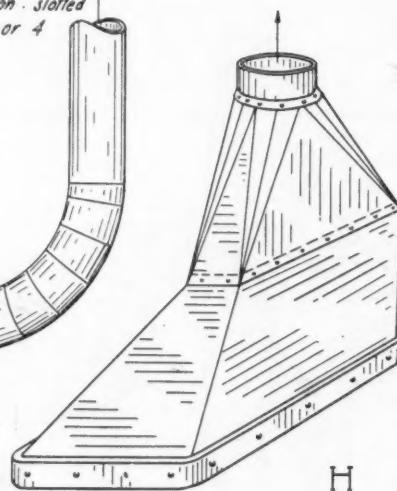
Tenoning Machine Hoods



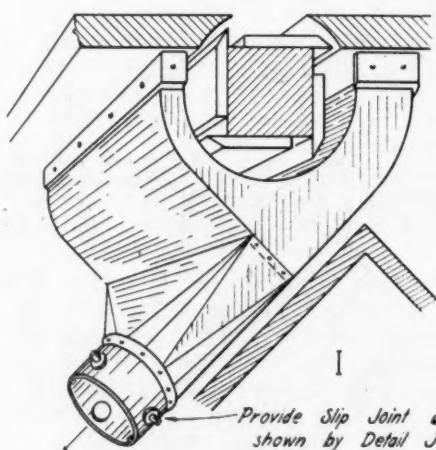
Detail of Slip Joint for Hood I.



End Planer Hood



High Speed Planer Hood



Jointer Hopper

FIG. 56 SHOWING VARIETY OF HOODS.

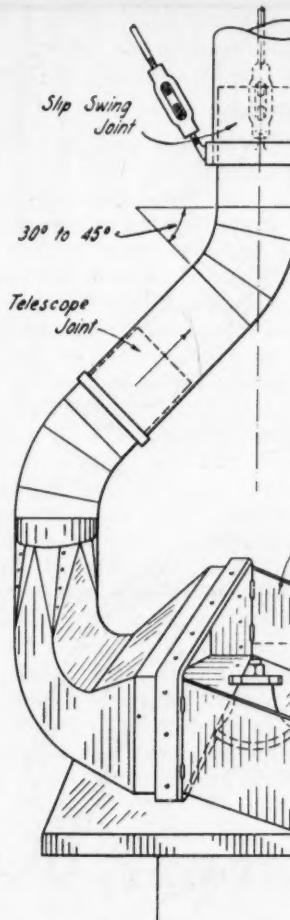


Fig. 57. SHAPER HOOD WITH CONNECTION.

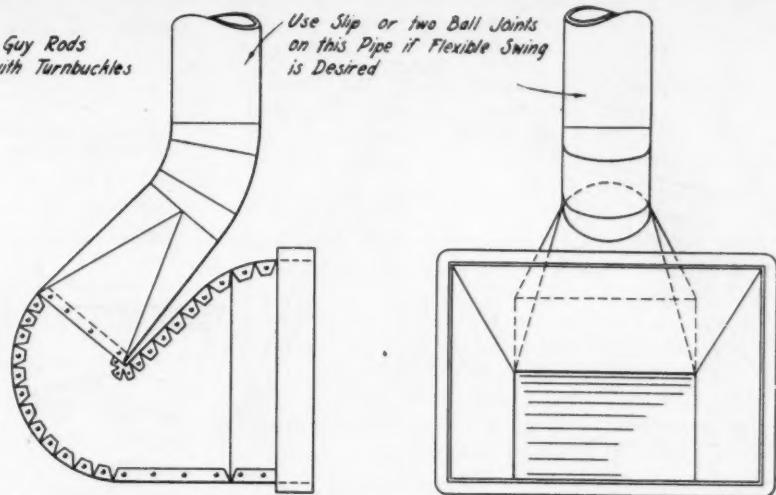


Fig. 58. ANOTHER DESIGN OF SHAPER HOOD.

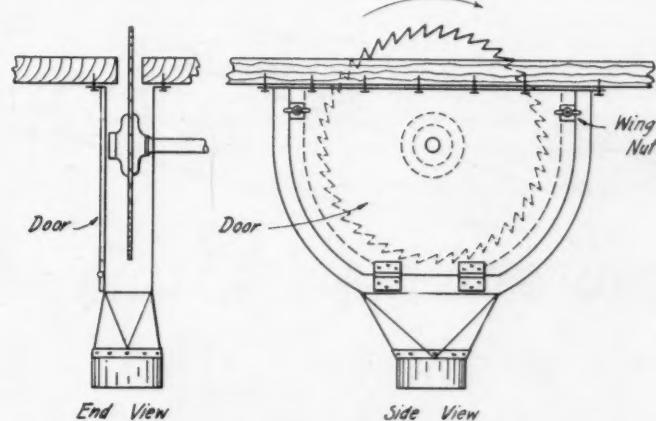


Fig. 59. RIP SAW HOOD.

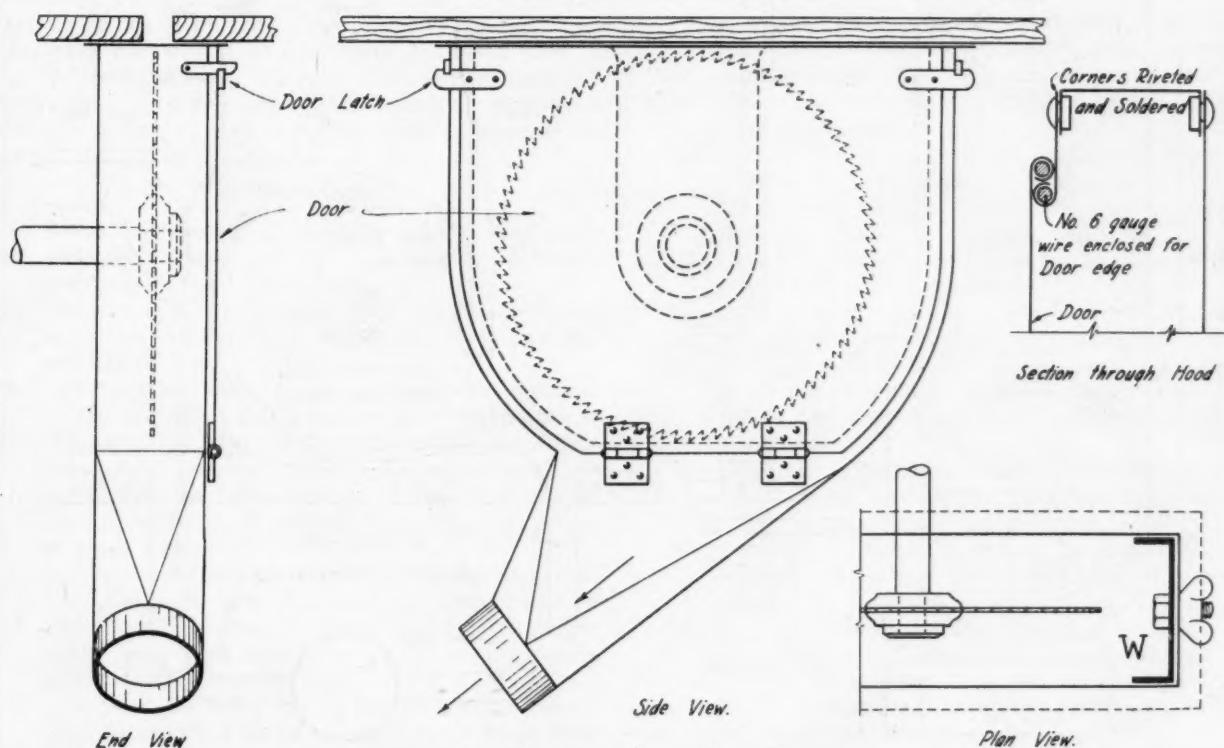


Fig. 60. CUT OFF SAW HOOD

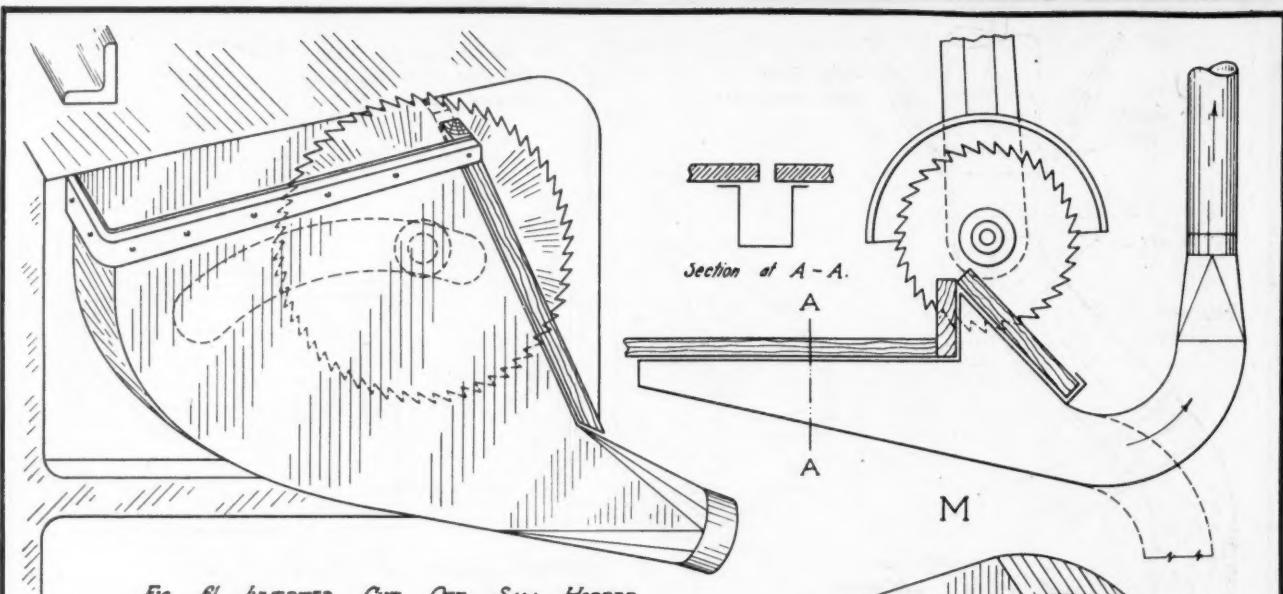


FIG. 61. INVERTED CUT OFF SAW HOPPER.

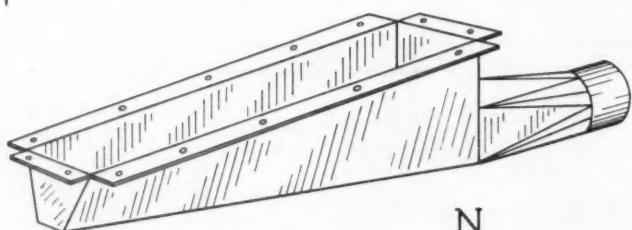
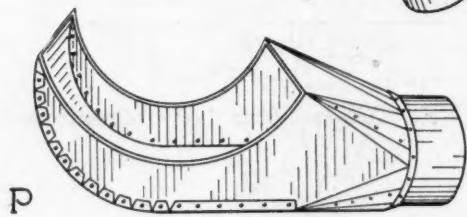
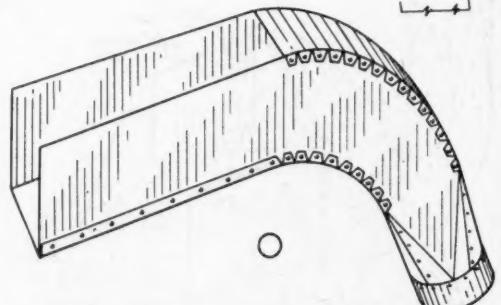
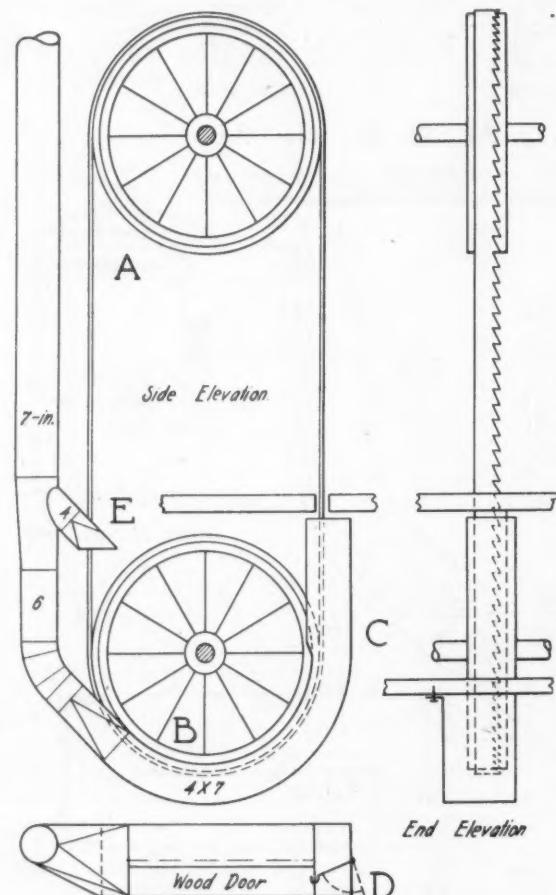


FIG. 62. SWINGING CUT OFF SAW HOPPERS.



Hopper for Slave Saw.



Plan.
Fig. 63. BAND SAW HOPPER WITH PIPING.

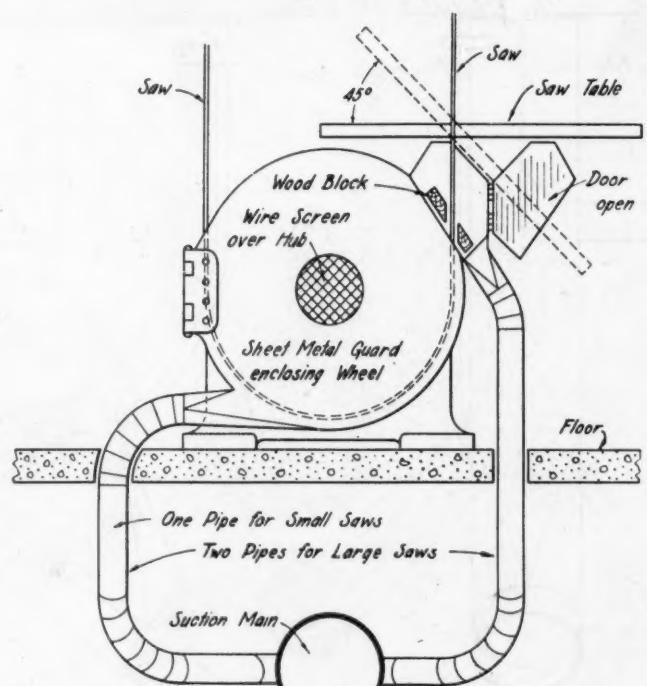


Fig. 64. ADJUSTABLE TABLE BAND SAW HOPPER.
(Used by permission)

preferable. A door is built in the side to enable removing the saw, when necessary.

Saw Hoods

Fig. 60 is a cut off saw used in many cases and shows a side door provided with hinges, clasps or other fasteners for easy removal of the saw. The width of the hood is about the same as the diameter of suction pipe, although other considerations may cause the hood to be narrower. In plan at *W*, a heel piece is set in with a screw and wing nut which allows raising and lowering the hood when the saw table is raised or lowered. By merely adjusting this plate, it fills in that space opened by the changed position of the table.

Fig. 61, Plate No. 29, shows a hood for an inverted cut off saw. As this saw moves back and forth a wood board is fitted over the throat of the hood so the saw does not come in contact with the metal hood. The heel of the hood closely follows the sawdust thrown from the saw and the width of the hood is governed by the pipe size, or by the conditions at the saw.

At *M* of Fig. 62 is shown a swinging cut off saw, where a long hood is used, and the air pipe may be connected from either above or below, as indicated by solid and dotted lines. Wood linings are built in the throat to protect the saw from metal contact. The length of the hood may be determined to suit conditions and the rear end is left open to assure ample

suction. Saw hoods of different designs are shown at *N*, *O* and *P*.

Band saw hoods are made in a great variety of designs. For a 3-in. band saw, 42-in. wheels are usually required. In Fig. 63 the hood below the table is made somewhat wider to allow for removal of the saw and a 7-in. suction pipe is required. If extra heavy sawing is done, an 8-in. pipe is necessary. Below hood *E* a 6-in. pipe with a 28 $\frac{1}{4}$ -sq. in. area is required. If the lower hood is made 7 in. wide for easy removal of the saw, then $28 \div 7 = 4$ in., the height of the hood. In this 4 x 7-in. hood a false bottom is attached to cover half of the width of hood, to give to the other half a stronger suction and still provide space to take off the saw. The door *D* in plant shows this arrangement. Where the sawdust clings to the teeth and is loosened by passing over the wheel, a hood *E* is added, 4 in. in size. Its suction draws the dust which does not enter the lower hood.

It is well to observe that small band saws require only one suction pipe; that large saws require two pipes, as in Fig. 63 or 64*; that Fig. 64 shows another method of trapping the sawdust; that the open air passage is generally at the top of hood; that wood block is used to protect the saw from metal; that a hinged door is provided to remove saw and that suction pipes can be carried to main in any position.

*Used by permission of Edwin A. Scott Publishing Co.

20 Suggestions For Post War Planning

AT THE Indiana convention R. A. Dadisman, Manager, Market Development Division, American Rolling Mill Co., offered a set of 20 suggestions to guide contractors in their post-war thinking and planning. These suggestions are so broad in scope and include so many of the things contractors forget or pass over hurriedly that all 20 are published here in "guide" form. Closely followed, these suggestions will enable you—as a member of this industry—to do your share in attaining and insuring prosperity after the war.

What You Can Do

1. Break the big job of planning into smaller parts and tackle one at a time. For example, Management, Sales, and Production.
2. Contact your community C.E.D. organization and your local Chamber of Commerce for ideas and assistance.
3. Ask your suppliers about any new developments in materials that may improve your workmanship, cut down handling costs, or broaden your business.
4. Investigate the possibilities of handling related lines of supplies, so your contacts will yield greater profit returns.
5. Look over the field of suppliers, pick the ones that offer the most in quality, service, merchandising assistance, business management assistance, credit, etc. Then concentrate your buying where it will do the most good.
6. Ask your industry trade publishers for ideas, subscribe to their trade journals, study them carefully and ask your employees to study them.
7. Try to visualize your place of business as a *store* as well as a *shop*, and yourself as a *salesman* as well as a *contractor*.
8. If you pay for a show window make it *pay you*.

9. Plan your shop layout to conserve space, time and materials.
10. If your plans include a change in location, better look into available space now, before the post-war rush.
11. Plan your inventory—and work your plan. Smaller purchases, frequent turnover and discounting bills, pays off.
12. Get rid of slow moving odds and ends and wartime substitutes.
13. Find out how much sheet metal and warm air heating business *your community* is likely to do, the amount that you should be able to get, and *then set a goal*.
14. Canvas local industries now for new construction plus regular maintenance work.
15. Contact local architects, builders, real estate operators, real estate departments of banks, building and loan associations and insurance companies—for business opportunities. And don't forget the home owners for repair and replacement work.
16. Contact the National Warm Air Heating and Air Conditioning Association for information on their plans for a new training program.
17. Develop an incentive system to encourage your workers to expend extra physical and mental effort.
18. Develop an adequate but simplified system of cost accounting and bookkeeping. Remember that your records are a means to an end and not the end in itself. Use them to guide you to more profitable business year after year.
19. If your plans for a fresh start or expanded operations will require additional capital, consult your banker early.
20. Adjust your mental attitude for a buyer's market after the war.

"Process Sheets" for a Shop Desk

By Ernest E. Zideck
Sheet Metal Consulting Engineer

IN the July issue of the AMERICAN ARTISAN we showed a sheet metal shop desk and described the manner used in mass production, in which the desk itself is engineered and its component parts planned. In this article we shall show how each component is processed for production, specifying the operations step by step and also specifying the standard or the special tools for each operation. The comparatively simple product, the Shop Desk, was chosen for this illustration of how products are planned and processed for production because the reader will that much better and easier understand the standardized procedures applied in industry in what has become known as "product and production engineering."

In the July article we described the methods of product engineering sufficiently well. We explained how the shop desk was planned for utility, appearance, practicability of production in quantity, and its COSTS. Blueprints were made for each single part and each sub-assembly, with specifications attached as to the materials to be used and the modes of binding

the parts, the finish of the sub-assemblies prior to, and the completion of the finish in the Final Assembly. The specifications read that a certain gauge of the metal is to be used for a specific part, that spotwelding, acetylene welding and brazing is to be employed in sub-assemblies, and that the Final Assembly is to be, as shown in the blueprints, by stove bolts, of which not a single one can be seen from either the front, the sides, or the top of the desk.

These blueprints and specifications are received in the Production Planning or Processing Department. In the case of the desk, there most likely would be one "planner" only, but in the case of a more complicated construction, the number of such "planners" might be and usually is over fifty, and it is chiefly in these latter cases that "processing sheets and tool analyses" must be checked and re-checked and compared one with the other and modified to correspond one with the other before they are released to the Production Department. It must be borne in mind that in the case of an airplane, for instance, there

PART PROCESS SHEET

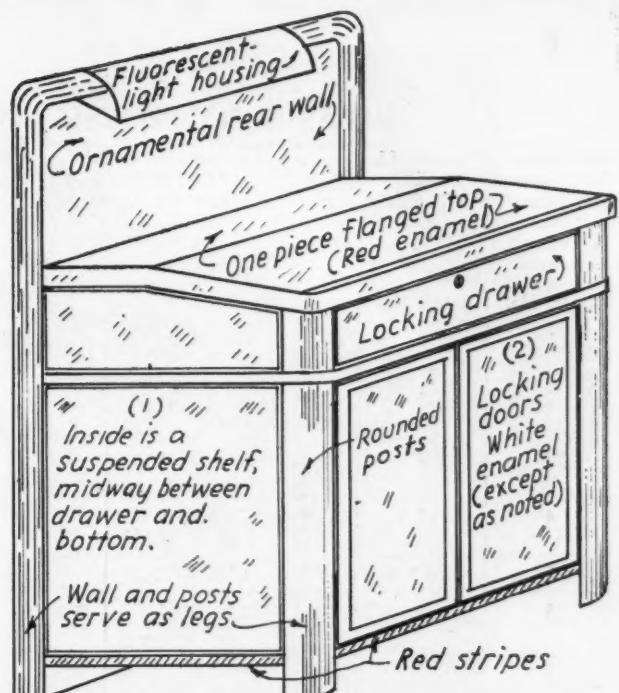
Part Name: REAR WALL	Part No: D-1001	Next As'bly No.: D-S-A-1-2
Material: SHEET STEEL	Spec.: C. R. SMOOTH	Size: 48 x 60
Finish: WHITE ENAMEL	Time: Prior to D-A-1	Assembly: D-A-1

Oper. No.	Dept. No.	Operation	Tool	Machine
1	1	LAYOUT	D-1001-B D-1001-B-1 D-1001-B-2 & 3	
2	1-2	INSPECT		
3	3	SHEAR TO SIZE	D-1001-B	8' Shear
4	4	CUTOUT WINDOW	D-1001-B DIE BL. D-1	No. 4 Press
5	4	NOTCHOUT	DIE N-D-1	No. 1 Press
6	4	PERFORATE	D-1001-B STRIPPET	No. 2 Press Brake
7	4-2	INSPECT	D-1001-B	
8	5	FORM FLANGES	D-1001-B-1 V-Dies ST.	Press Brake No. 1
9	5-2	INSPECT	D-1001-B-1	
10	5	FORM RADIALS 1 and 2	D-1001-B-2 R-DIE-ST. 1½" Rad.	Press Brake No. 2
11	5-2	INSPECT	D-1001-B-2	
12	5	FORM RADIAL 3	D-1001-B-3 R-DIE-ST. 1½" Rad.	Press Brake No. 3
13	5-2	INSPECT	D-1001-B-3	
14	5	FORWARD TO Dept. 6	WHEEL-BENCH	

might be and usually are upward of 25,000 separate sheet metal parts, each of which must be processed separately. Another thing to be considered is that "Parts" are released for production separately, one component in advance of the other, and that the production forces really do not know what the part is for and to which other part it must fit, and that the only guidance they have is the blueprint and the specification. And it is up to the Processing Department to write out their Processing Sheets in a manner which will produce a part to that stage only, as is necessary to make it align with another part or multiple parts, all of these parts to be completed when so aligned and disassembled and finished as per specifications, to be ready for actual assembly.

In many cases the blueprints show only a certain sub-assembly. In these cases the production planner must search out from the composite picture the individual components, determine the mode of their making and by what means, and must provide for their processing to a certain stage, the parts to be finished in their alignment as aforesaid. That is why there are three kinds of Process Sheets: one for each individual part, one for each preliminary sub-assembly in which the individual parts are completed, and one for actual assembly.

In our present problem, that of processing for production the shop desk illustrated, we shall as nearly as possible imitate the standard practice employed in industry today, thereby outlining the procedures sufficiently well for imitation by the fabricator of any other product needing such processing. And whenever we have more than six identical products to manufacture, it will prove time saving, more expedient and less costly to so process. The men in the shops, from the issuer of the materials clear



See text under "Product Engineering"
FIG. 2 SHEET METAL DESK

2.

SUB-ASSEMBLY PROCESS SHEET

Part Name: REAR WALL	Part No.: D-1001	S. A. No.: D-S-A-1
Part Name: L-Corner	Part No.: D-1001-1	
Part Name: R-Corner	Part No.: D-1001-2	

Oper. No.	Dept. No.	Operation	Tool	Machine
1	6	WELD RIGHT CORNER WELD LEFT CORNER	JIG-D-1001-J "	Acetylene "
2	6	WELD FLANGE 1 WELD FLANGE 2	" "	" "
3	6-2	INSPECT	D-1001-B-1 D-1001-B-2	
4	6	FORWARD TO DEPT. 7	WHEEL BENCH	
5	7	FINISH	HAND GRIND No. 8	WHEEL GR. No. 14

3.

SUB-ASSEMBLY PROCESS SHEET—2

Part Name: REAR WALL	Part No. D-1001	S-A-No. D-S-A-2
Part Name: LIGHT COMP.	S-A No. D-1001-3	
Part Name:		

Oper. No.	Dept. No.	Operation	Tool	Machine
1	6	RECEIVE FROM DEPT. 7	WHEEL BENCH	
2	6	ALIGN IN JIG	JIG-D-1001-J	
3	6-2	INSPECT ALIGNMENT	"	
4	6	BRAZE	"	Acetylene
5	6-2	INSPECT		
6	6	FORWARD TO DEPT. 7	WHEEL BENCH	
7	7	FINISH FOR WHITE ENAMEL	HAND GRINDER No. 5	WHEEL GR. No. 6
8	7-2	INSPECT FINISH		
9	7	FORWARD TO DEPT. 8	WHEEL BENCH	

down the line to the final finish and assembly of the product, will be enabled, by being furnished the process sheets, to work "clock-like" and do the work in half the time.

Special Data

The samples of the Process and Tool Analysis Sheets are in standard practice supplemented with diverse other information, such as the name of the processor and planner, the date written, the date the sheet was checked, more specific material determination, and such

4. SUB-ASSEMBLY PROCESS SHEET—3

Part Name: REAR WALL	Part No. D-1001	S-A-No. D-S-A-3
Part Name: LEFT SIDE	Part No. D-1001-4	
Part Name: RIGHT SIDE	Part No. D-1001-5	
Part Name: REAR BOTTOM	Part No. D-1001-6	
Part Name: DESK TOP	Part No. D-1001-7	
Part Name: BOLTS	Part No. X-4-1-2	

Oper. No.	Dept. No.	Operation	Tool	Machine
1	8	Align LEFT SIDE to REAR WALL	Hand Drill Drill No. 41	
2	8	Align RIGHT SIDE to REAR WALL	" " "	
3	8	Align REAR BOTTOM to SIDES and REAR WALL	" " "	
4	8	Align DESK TOP to SIDES and REAR WALL	" " "	
5	8-2	INSPECT ALIGNMENT		
6	8	DRILL HOLES FULL SIZE IN REAR WALL	Drill No. 18 " " "	
7	8	DIS-ASSEMBLE		
8	8	BURR HOLES IN REAR WALL		
9	8-2	INSPECT FOR ENAMELING		
10	8	FORWARD REAR WALL to DEPT. 9	WHEEL BENCH	

5. FINISH PROCESS SHEET

Part No. D-1001		Part Name: REAR WALL	Finish: WHITE ENAMEL Spec. 00-5XX	
Oper. No.	Dept. No.	Operation	Tool	Machine
1	9	DEGREASE	Tank	Conveyor Hoist
2	9-2	INSPECT		
3	9	FORWARD TO DEPT. 10		Conveyor
4	10	PRIME 1 coat	Spec. 00-5	Spray Booth
5	11	BAKE	Spec. 00-5-X	Oven
6	11-2	INSPECT		
7	11	RUB-DOWN	Sponge	Bench
8	11-2	INSPECT		
9	11	MASK RETAINERS	Tape	
10	11	ENAMEL	Spec. 00-5-XX	Spray Booth
11	11	BAKE	" "	OVEN
12	11-2	INSPECT		
13	11	FORWARD TO DEPT. 12		Conveyor
14	12	STORE FOR FINAL ASSEMBLY		

6. TOOL ANALYSIS SHEET

Part Name:	REAR WALL	Part No.	D-1001
Tool Name:	WELDING JIG	Tool No.	D-1001-J
Material:	ANGLE IRON	Specification:	1/4" x 3" x 4" x 14 feet
Construction:	WELDED	Finish:	SMOOTH GROUND

DESCRIPTION:

- (1) Use Templates D-1001-B, D-1001-B-1, D-1001-B-2, D-1001-B-3.
- (2) Use Drwg. No. D-1001-D, D-1001-D-1 & 2.
- (3) Construct a Frame receiving and holding tight the formed part, with standard quick-clamps closing over the flanged walls of the part immediately below the flanges, and with suitable arrangement holding in position the corners D-1001-1 & 2, and the Light Compartment S-A-No. D-1001-3, for welding and brazing.

other information; and in Tool Analysis Sheets there is also provided a column for estimating the COST of the tool so analyzed.

Assembly

Another Processing Sheet is written for the Final Assembly, specifying the step-by-step assembly, the tools to use, the bolts and the other binding means and supplementary parts such as handles, locks and diverse other items to install in predetermined succession. In the case of the Shop Desk, of which the processed Rear Wall is but one part, there are 22 other parts, some large and some only pieces of sheet metal to be welded into the Desk Top, but every single such part has its own Process Sheet, so that not a single item is missed in preparing the components and so that the production costs may be accurately computed from these Process Sheets.

Tell All

The less experienced the help employed in fabrication, the more specific should be processing, telling the help practically every move that is necessary, and in what sequence it is necessary in the production of the particular part and a particular sub-assembly. From sheets written in this manner it is possible to gauge the labor cost of each single operation and thereby arrive at a cost estimate covering each single part and, in the aggregate, all of the parts and their assembly.



Quick fuel for the "blitz buggy"

There's a tank battle going on—and gas is running low in an American "blitz buggy." Does the driver take time out to hunt for a filling station? No—he stays in there slugging. And pretty soon a truck roars up, loaded with five-gallon containers of gas. On the jump, G.I.'s grab the cans.

Glup—glup—glup . . . almost as quickly as that, five gallons rush down the tank's thirsty gullet. The "blitz can" has gone into action—a sheet steel container

which in the thick of battle dumps its load *fast*, thanks to the air chamber and tube built into its top.

It takes steel sheets of exceptional deep-drawing quality to make this blitz can, with its deep bulge on top which forms the air chamber.

Bethlehem is supplying in large quantities the special sheet steel needed for blitz cans. And of course it is turning out sheets, by the mile, for countless other vital uses on the fighting fronts and at home.

Bethlehem Steel Sheets

Put these **DUST-STOP*** SALES MEN to work for you

Powerful magazine ads in five leading publications are reaching



more than 12,000,000 families

each month, pre-selling many of your customers. In addition, FREE folders



and mailing pieces



, FREE newspaper

mats



, window streamers



and

displays

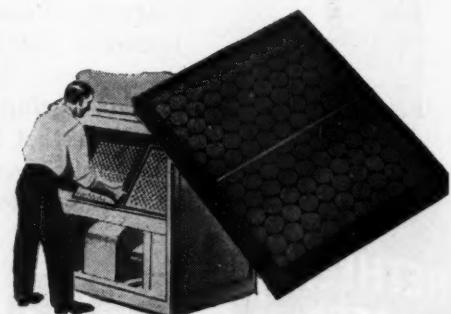


, make it easy for you to tie in . . .

Contact your DUST-STOP supplier TODAY and

get your share of the big Fall Business!

● The Fall Campaign is under way. The FREE Dealer Helps are ready and waiting. See your distributor at once, or write Owens-Corning Fiberglas Corporation, 1930 Nicholas Building, Toledo 1, Ohio. In Canada, Fiberglas Canada, Ltd., Oshawa, Ontario.



DUST-STOP* AIR FILTERS

*T. M. REG. U. S. PAT. OFF.

ASSOCIATION

Activities



National

The National Warm Air Heating and Air Conditioning Association, 145 Public Square, Cleveland 14, Ohio, offers just a point or two for dealers on furnaces and repairs:

"Don't expect the impossible this Fall in the delivery of furnaces for replacements and repairs by manufacturers and jobbers. The supply is limited due to some material but particularly labor shortages. So to keep the home furnace fires burning we're going to have to stretch our imaginations.

"The conditions which exist with reference to manufacturers production is, as you know, beyond their control. And what affects manufacturers also affects jobbers, dealers and the ultimate consumer.

"To make both ends meet and so that you can to the greatest possible degree service the people in your community during the trying Fall season which is now upon us, we suggest that consideration be given to the following two points:

1. Don't dismantle a furnace unless you are positive that repair parts are immediately available.
2. Plan on extending the furnace repair season as far as possible. Don't forget that there are mild days in November and December. Chances are if you can take care of a large percentage of your peak demands in October, that you will then be in a position to satisfy the remainder during the mild days in November and December.

"Bear in mind that manufacturers and jobbers do not make a profit unless goods are delivered and the same is true of dealers. Failure to make delivery is caused due to conditions beyond their control. One of the conditions which is a shortage of labor affects manufacturers, jobbers and dealers alike."

Indiana

The Sheet Metal and Warm Air Heating Contractors' Association of Indiana, in their Bulletin dated August 23, call attention to the shortage of materials, MPR-251, gross income tax and the new bill to be introduced at the next session of the State legislature, and L-41—WPB Directives. The Indiana association is a member of the National association, and offers assistance in any cause for the good of the industry.

Frank G. Sink, President

Milwaukee

The Milwaukee Sheet Metal Contractors Association, Inc., has published a membership list as of June 1, with officers, active members, association and honorary members, including all street addresses, telephone numbers and mailing zone.

Over 100 persons attended the July 12 picnic of the Milwaukee local at "The Cedars," Cedarburg, Wisconsin, on July 12, with bowling contests, games, lunch and refreshments, superb dinner at 6:30. The picnic lasted until midnight. There was a good attendance from Chicago and Wisconsin State.

Paul L. Biersach, Secretary

Contractors' National

In its second bulletin to members, the Sheet Metal Contractors' National Association, Inc., addresses a letter to members and all other sheet metal and roofing contractors, signed by President Patrick S. Varden, on member-

ship in the National Association. Membership, says President Varden, is the principal objective for without a large membership the association will not be in sufficient strength to obtain the results hoped for. Membership has increased, but not to the extent hoped for. MPR-251 is an example of recognition through association, whereas the individual has little or no chance to be heard.

Attached to this bulletin is a detailed design of parts for a standard dust collector with text, punched ready for insertion in a loose-leaf binder. If a member wishes some particular item reproduced, the association offers their best attention and consideration.

A list of manufacturers and jobbers now members in the association is included.

Highlights of a bulletin on re-employment policies recently released by the National Headquarters of Selective Service are given. Copies of the Bulletin are available by writing the Office of War Information, Washington, D. C.

CLARENCE J. MEYER, National Secretary.

Florida

The August 15 issue of *The Florida Roofer*, published by The Roofing & Sheet Metal Contractors Association lists membership now supporting the organization.

President Fred A. Falkner has appointed Frank Tack, P. O. Box 37, Clearwater, chairman of a committee to study the present Mechanic's Lien Law.

District directors have been appointed by President Falkner as follows:

Wm. Palmer of Miami for Indian River, St. Lucie, Martin, Palm Beach, Broward, Dade, Collier, Okeechobee and Monroe counties.

C. E. Brown of St. Petersburg for Lee, Charlotte, Glades Sarasota, DeSoto, Highlands, Hardee, Manatee, Hillsborough, Polk, Pasco, Hernando, Citrus, Hendry, Sumpter, and Pinellas.

The annual dues are now \$25 and the secretary is mailing invoices to all shops who have not yet paid dues. Most of the shops are agreeing that it is necessary to have funds to work with if anything is to be accomplished.

Sheet metal shops are invited to send in their problems to be solved, and the association offers assistance.

Workmen's Compensation Rates for the State of Florida are discussed and rates for roofing, sheet metal and carpentry are tabulated from their effective dates—1935 through 1943. New rates will be effective October 1, 1944, and have not yet been announced. The association takes credit for much of the reduction in roofing rates, brought about by representation at hearings for the adjustment of rates. Sheet metal rates have also dropped, but the rate for that classification was never as high as that for roofing.

The second page of "*The Florida Roofer*" carries a directory of manufacturers' representatives and wholesale houses giving service to shops in Florida.

L. A. BURGESS, Secretary-Treasurer.

CONVENTIONS AND MEETINGS

1944

Sept. 21-22—Indoor Climate Institute. Two-day Open Forum. Book-Cadillac Hotel, Detroit. Arthur E. Schanuel, Executive Secretary.

Dec. 13-14—National Warm Air Heating & Air Conditioning Association. Annual Statler Hotel, Cleveland. Geo. Boeddener, Man. Dir.

Association Activities . . .

Wisconsin

The Sheet Metal Contractors Association of Wisconsin, Inc., held their monthly meeting on September 2nd with President Mantei in the chair.

MPR-188 was discussed following the disposition of other communications.

The secretary submitted and read extracts from correspondence passing between the National Sheet Metal Contractors Association and President Mantei with reference to membership, payment of dues, mid-season meeting of Board of Directors, and other activities. National Director Kramer spoke of the letter written to Commissioner Bowles of the OPA Division.

All angles of Senator Murray's bill 1913 and the answers received to a questionnaire sent out by the American Small Business Organization were considered and discussed and it was the opinion of those present that the association mail a copy of these documents to the entire membership of the association.

The 1945 Annual State Convention is to be held in February, usual week.

Paul L. Biersach, Secretary.

Indoor Climate Institute

The Indoor Climate Institute with headquarters in the Penobscot Building, Detroit, will hold a two-day Open Forum at the Book Cadillac Hotel, September 21 and 22, in order that members of the related industries will have an opportunity to take a square look at the facts and subjects that have a direct bearing on the present and post-war markets for their products, according to President P. B. Zimmerman.

Labeled as a Conservation and Postwar Planning Conference, the Open Forum is timely in keeping with the spirit of cooperation necessary to assist the public in going through the forthcoming winter with highly restricted fuel supplies, due to the war.

The annual meeting and election of officers of ICI will be held simultaneously with the Open Forum.

The ICI is organized to assist manufacturers and trade associations in the promotion of controlled indoor climate and is designed to serve as a clearing house of unprejudiced information.

The program for the two-day Forum was drafted to assure the type of clinic covering all aspects of those factors which must be considered in appraising the educational job to be done with the public and all branches of the building industry if the members of the heating, cooling and air conditioning industries are to obtain their proper share of the construction dollar.

One of the Institute's major activities will be a program of co-operation with industries, institutions of learning and the government in post war personnel training.

Arthur E. Schanuel has been appointed Executive Secretary of the Indoor Climate Institute effective as of July 1st, according to an announcement by P. B. Zimmerman, President of the organization.

For the past six years Mr. Schanuel has been associated with the National Electrical Manufacturers Association as field representative of the National Adequate Wiring Bureau. He has a wide acquaintanceship in the residential branch of the electrical industry and the home building field.

"With the appointment of Mr. Schanuel, the I.C.I. rounds out its first year with a complete program of organization and the establishment of policies which should give great scope, of far-reaching value to the Institute's operations," stated Mr. Zimmerman.

In this connection, I.C.I. has just issued a Progress Report to its members, supplemented by a Question and Answer Bulletin which clarifies the manner in which I.C.I. will function under a committee form of structure. The

Fox Valley, Illinois

The 10th Annual Field Day of the Fox Valley Furnace and Sheet Metal Contractors' Association was held July 26th at the St. Andrew's Country Club near St. Charles, Illinois.

In spite of early threatening weather 60 contractors, manufacturers, jobbers and salesmen turned out for an afternoon of golf, horse shoes and general get-together. This was followed by a splendid turkey dinner and social hour.

President Jack Stowell had charge of the dinner meeting. Prizes at golf were won by Mal Cahill, Harry Ebbert, Laurie Walquist, Nolting, Stahler and Perry.

The horse shoe cup was won by Kauffman and Dellorto of Ace Heater Parts Corporation.

The following committees deserved credit for making the day a success:

Arrangements: Geo. Bushman, Andy Lind, Bill Klinkey.

Registration: Bill Stevens, Joe Strotz, Fred Lamp.

Reception: Alvin Lohbauer, Clayt Evelen, Phil Ries, George Lennert.

Horse Shoes: Don Glossop, George Bushman.

Golf: Fred Nolting.

Jack Stowell

principal committee chairmen are as follows:

PUBLIC INFORMATION COMMITTEE, Chairman, C. D. Lyford, Minneapolis-Honeywell Regulator Co.; TRADE ASSOCIATIONS COMMITTEE, Chairman, J. M. McClintock, Sales Manager, Illinois Iron & Bolt Co.; MEMBERSHIP COMMITTEE, Chairman, T. A. Crawford, General Sales Manager, Timken Silent Automatic Division; SCIENCE COMMITTEE, Chairman, Willis Carrier, Chairman of the Board, Carrier Corporation; Vice Chairman, L. N. Hunter, Vice President, National Radiator Company; FINANCE COMMITTEE, Officers of the Indoor Climate Institute; LOCAL CHAPTERS COMMITTEE, Chairman, Jack Searls, Sales Manager, White Rodgers Electric Co.; POSTWAR PERSONNEL AND TRAINING COMMITTEE, Chairman, J. R. Scott, Ass't to the President, L. J. Mueller Furnace Co.; SPEAKERS' BUREAU COMMITTEE, Chairman, John Knighton, Sales Manager, Servel, Inc.; PROMOTIONAL COMMITTEE, Chairman, C. T. Burg, General Sales Manager, Iron Fireman Mfg. Company.

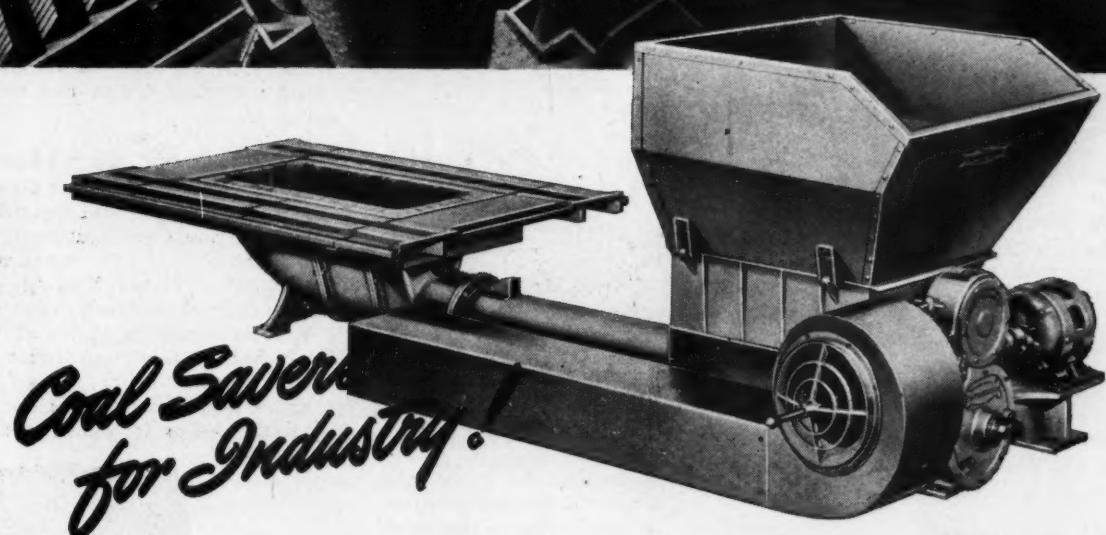
Over fifty leading American firms compose the active membership of I.C.I. An Associate Membership, authorized at a recent Board Meeting, will permit building material, fuel, insurance and banking interests to participate in the educational program with the American public.

As indicated by the various committees, the work to be undertaken by I.C.I. has many ramifications, but all are directed at the fundamental objective of education. The purpose of I.C.I. may be specifically described as follows:

- (1) To educate the public on the advantages of greater indoor comfort and better health.
- (2) To cause the public to place the proper value on adequate, modern heating equipment so home owners will not insist upon cheap, inferior installations in order to save a few dollars—the difference between a good and a bad system.
- (3) To encourage the public to demand higher living standards, thus assuring manufacturers of indoor climate equipment a higher percentage of the construction dollar.
- (4) To act as a clearing house of unprejudiced information for the public, professions, press, trades, associations, manufacturers and service organizations.
- (5) To assist educational institutions in offering courses of instruction in the many diversified branches of the heating, cooling and air conditioning industries.
- (6) To encourage and cooperate with scientific research institutions, organizations, groups and clinics in the analysis of the effect of controlled indoor climate upon human health, comfort and efficiency.
- (7) To cooperate with the trade associations in making known the respective accepted standards so that the public will be in a position to take advantage of the extensive research conducted by the various associations and authorities and reflected in the products and systems meeting the established standards.



Now's the Time to Sell- **Combustioneer** COMMERCIAL AUTOMATIC COAL STOKERS



*Coal Savers
for Industry.*

In your city this very minute there are hundreds of large and small industrial plants, schools, churches, apartments, office buildings, theaters, stores, greenhouses—and commercial establishments of every type which simply must save coal and labor next winter.

With Combustioneer's Franchise you can now sell users of 25 tons a year or more, for immediate installation, a Commercial Model Combustioneer. It will cut furnace tending labor by one-third or more—use less fuel, and reduce fuel costs by 20 to 30%, as proved by thousands of installations.

Right now you can cash in on the stoker boom—sell Commercial Model Combustioneers at substantial profits, and lay the groundwork for extra, continuing profits with Combustioneer's famed line of household stokers, to be available as soon as Government restrictions are lifted.

Combustioneer is adaptable to practically any boiler or furnace. It is the complete and outstanding system for automatically feeding and burning coal by the famed forced-draft under-feed method of firing—proved over the years to give the greatest possible amount of heat, hot water, steam, or power per pound of low-priced coal burned.

A PIONEER PRECISION PRODUCT WITH OUTSTANDING FEATURES

Combustioneer has everything to get you immediate sales. It is backed by 28 years of Pioneer Design and Engineering Research in the precision

manufacture of automatic coal-burning equipment. Outstanding features, including the famed Breathing Fuel Bed, are internationally recognized.

From laboratory control to final test, Combustioneer is completely built in a modern plant by men, machinery and facilities exclusively devoted to the manufacture of top quality precision products.

There never will be a better time to get immediate sales while building for the future with Combustioneer's franchise. Write or wire for all the facts about the nationally advertised Combustioneer today.



Combustioneer
AUTOMATIC COAL STOKER
FOR HOMES, APARTMENTS AND FACTORIES



A Product of the Steel Products Engineering Company, Springfield, O.

NEW PRODUCTS

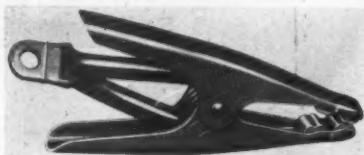
For your convenience a number has been assigned to each item. Circle the items in which you are interested on the coupon on page 110 and mail to us.

△ Indicates manufacturer not listed in 1944 Directory.
● Indicates product not listed in 1944 Directory.

• 54—Ground Clamp

The Lincoln Electric Company, 12818 Coit Rd., Cleveland 1, announces a new ground clamp for welders.

Besides its low cost, the clamp is designed so that each jaw connects independently to the ground cable.

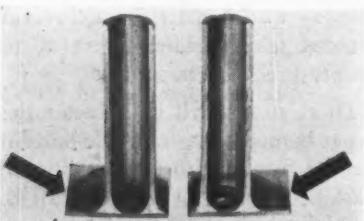


Thus, if one jaw is prevented from making a good electrical contact, due to any reason such as heavy scale, paint, etc., the other jaw will carry the current.

The ground clamp has a heavy-duty processed steel frame with durable copper conductors and contacts. The unit weighs only 1½ pounds, has a maximum jaw spread of 2½ inches and a rating of 300 amperes.

◆ 55—EutecRod

Eutectic Welding Alloys Company, 40 Worth Street, New York 13, N. Y., has just developed EutecRod 199, a new free flowing soft solder for use on aluminum sheet and aluminum alloys. Used with Autochemic Eutector Flux 199, EutecRod 199 will flow on aluminum readily. In long laps it will



make joints of moderate strength, but should generally be used as a seal.

EutecRod 199 is suitable for applications where the completed joint will not be heated over the boiling point of water (212 deg. F.) under working conditions. Its low temperature of application, 400 deg. F., makes it possible to join thin sheet metal without danger of distortion. The rod will work on cast aluminum as well as on wrought aluminum, and on steel, copper and nickel alloys.

△ 56—Galvanizing Solder

Farrelloy Company, 1243 N. 26th St., Philadelphia, offers Farrelloy Galvanizing Solder for repairing damaged galvanizing—a new metal formula which has an affinity for the base metals usually galvanized, thereby making a homogenous bond in the repair of damaged galvanizing at a very low temperature. The general color characteristics and appearance are the same as hot-dipped galvanizing, with no line of demarcation.

The Galvanizing Solder may be ap-

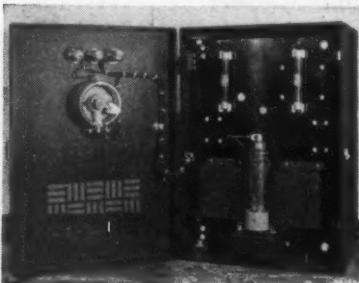


plied by first heating the metal, applying the solder and brushing with a wire brush or steel wool—the steel wool has a tendency to give a more even coat.

Farrelloy Galvanizing Repair Solder is made in convenient form—13 bars to the pound.

◆ 57—Welding Timer

Westinghouse Electric and Manufacturing Company, Department 7-N-20, East Pittsburgh, Pa., announces a new precise welding timer with heat control for timing intervals of one-half cycle or less. The new SP-18 ½ cycle timer is designed for welding of such items as radio tube parts and



sockets, pig-tail resistors to terminal lugs, watch and instrument parts, contact tips on electrical relays and other small parts.

The timer is furnished as a separate control for use with existing small bench welders and also in combination with a small welding transformer. Only one control tube is used, this thyratron serving the dual purpose of rectifying alternating current to charge a firing capacitor and also firing the small ignitron power tube. Heat control is accomplished by a phase shift method, the adjustment dial for which is mounted on the cabinet door.

◆ 58—Draft Korektor

Cole-Sullivan Engineering Company, 1316 Third Street, North, Minneapolis, announces a new 6-inch diameter barometric draft control for space heaters—both oil and coal burning—to be known as Draft Korektor, Type F, No. 906, completing the series of C.S.E. Draft Korektors now available in all standard domestic sizes.

Extremely fine counterbalancing of the blade keeps it closed until the



draft reaches the ideal minimum for clean, efficient combustion. The blade is close fitting, to prevent leakage at low draft, and swings on nearly frictionless, knife-edge, non-clogging pivots. A large unrestricted opening provides maximum control on high draft.

The draft adjustment is patented—a flat draft-weight inside, turned edge-wise to the airstream, offering minimum resistance to airflow; positive fibre washer friction secures the adjustment without locking; an easily accessible handle is on the outside.

A long tee side places the control well away from the flow of gases, for cleanliness and minimum disturbance by eddy currents.

(Continued on page 100)

Here's a great small
spotwelder that is

★ sturdy...

★ precise...

★ fast...

★ compact...

MODEL PMCR.0-1

Rated 30 KVA at 50% duty cycle
for power supply of 440 or 220
volts, 60, 30 or 25 cycles. Capacity:
clean mild steel from two
thicknesses of .016" up to and
including .080" — stainless steel
up to a maximum of .040" plus
.040". Speed on two thicknesses
of .032" thick pickled mild steel
is 180 welds per minute. Maximum
electrode pressure at 24"
throat depth is 1000 lbs.



←
Write for descriptive
bulletin No. 112-A

SCI AKY

BROS.

Manufacturers of a Complete Line of AC and DC Electric Resistance Welding Equipment
4915 W. 67TH ST., CHICAGO, 38, ILLINOIS

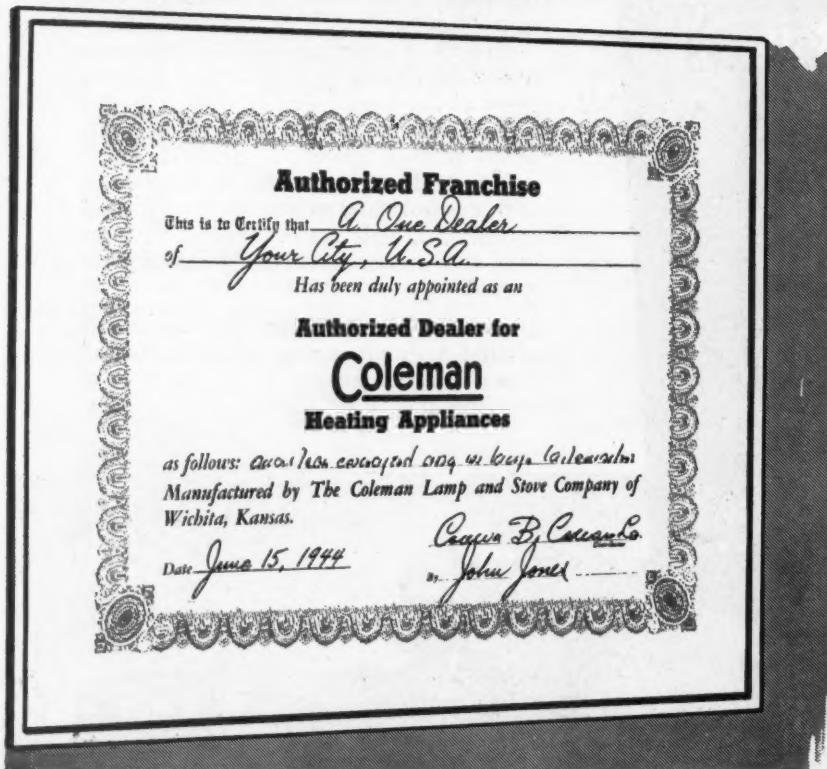
In England: Sciaky Electric Welding Machines, Ltd., London
Branch offices in Detroit and Los Angeles

SCI AKY engineering has proved that it is possible to make a machine that is small, yet capable of delivering fast, high quality spot welds in day in and out production. Incorporated in this rocker arm type welder are exclusive features hitherto only used in larger machines. The use of heavy duty roller bearings at the fulcrum point of the arm, together with a special rubber cushion in the pressure cylinder, assure smooth action . . . eliminate hammering and wear. The design is compact with controls and contactor in a hinged cabinet . . . dials are convenient to operator and unit may be easily installed or moved.

If your problem involves the fabrication of mild, stainless or zinc-coated steels and brass in light gauges, it will pay you to consider the "PMCR.0-1."



Here's Why America's Leading Home-Heat Dealers PROUDLY DISPLAY THIS FRANCHISE



These Are The Factors That Make It A VALUABLE PIECE OF PROPERTY FOR YOU

With this framed franchise on your wall, you stake out one of the richest sales-producing claims in your community. As an authorized dealer of Coleman Home Heating Appliances, you are granted the privilege, as per your agreement with your distributor, of selling the leading and "hot-selling" line with which you can dominate 85% of your local post-war heating market. Here's what you get in the Coleman Line:

A complete line of appliances with which you can supply the heating needs of any home—new or old—up to, and including, the \$7500 class. There will be Coleman Space Heaters, Floor Furnaces, Central Heat Plants, Water Heaters. There will be models for gas, oil and butane gas—automatic heat plants to suit the popular fuels of your locality.

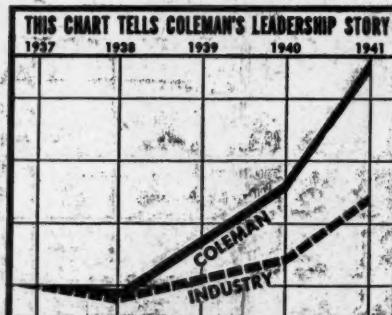
You will have heat plants that are compact in size, big in heating capacity, proved

in performance—plants that are low in price, and low cost installation with low cost operation—new, modern heating plants for the mass market.

A line of proved sales leaders. Pre-war Coleman Floor Furnaces far outsold all other makes—more than the next two leaders combined. Pre-war, the Coleman Oil Heater line was an outstanding leader. One Coleman Oil Heater model was the largest-selling model of its kind in America. Coleman will be a stronger leader in the postwar period.

A Coleman Heating Appliance Franchise is a high-dividend-paying certificate in a big volume postwar market that is now being promoted by Coleman's greatest advertising campaign. And, it's backed by full dealer cooperation and strong sales support.

A Coleman Franchise is worth real money now—it will be worth more postwar!



This Chart Tells Coleman's Leadership Story in the Heating Appliance Field. It shows more than leadership in sales alone—it shows how Coleman has led in growth. Here is a leader who is increasing his lead—a Coleman Franchise will help you increase yours.



THE "HOT" NAME IN HOME HEATING



THE COLEMAN LAMP AND STOVE COMPANY

WICHITA 1 • CHICAGO 11 • PHILADELPHIA 8 • LOS ANGELES 54



"SOAKED"
and ready
to roll

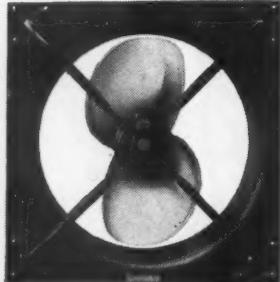


"Soaking the ingot" isn't just a funny phrase. It's an important step in making ARMCO Ingot Iron for durability and easy-working qualities. Here an ingot is being plucked from the white-hot pit. The temperature is uniform throughout and the iron is ready to roll on the Armco-invented continuous mill. The American Rolling Mill Co., 1641 Curtis St., Middletown, Ohio.

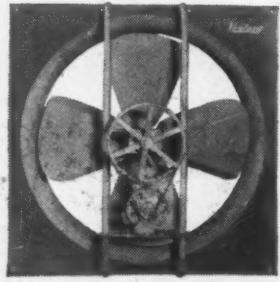
EXPORT: THE ARMCO INTERNATIONAL CORPORATION

FINISH THE FIGHT—
WITH WAR BONDS

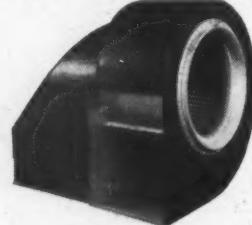




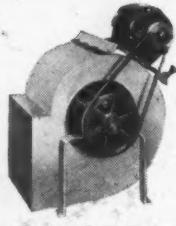
Ventura Fan with direct connected 2-speed fully enclosed motor.



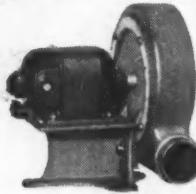
Ventura Fan with V-Belt Drive.



ABC Utility Set for use with duct system.



ACF Fan with V-Belt Drive.



Type P Pressure Blower.



PRODUCTS THAT KEEP WAR WORKERS "WALKIN' ON AIR"

We venture to say that there are no less than a million good reasons for the success of America's war effort.

One way to keep war workers "walkin' on air" is with American Blower electric ventilating equipment.

"Give 'em air," and lots of it, winter, summer, spring and fall—that's good ventilation, and it's good business, too. You can do it with the ventilating equipment shown on left. Regardless of the process or purpose, there's a type and size of

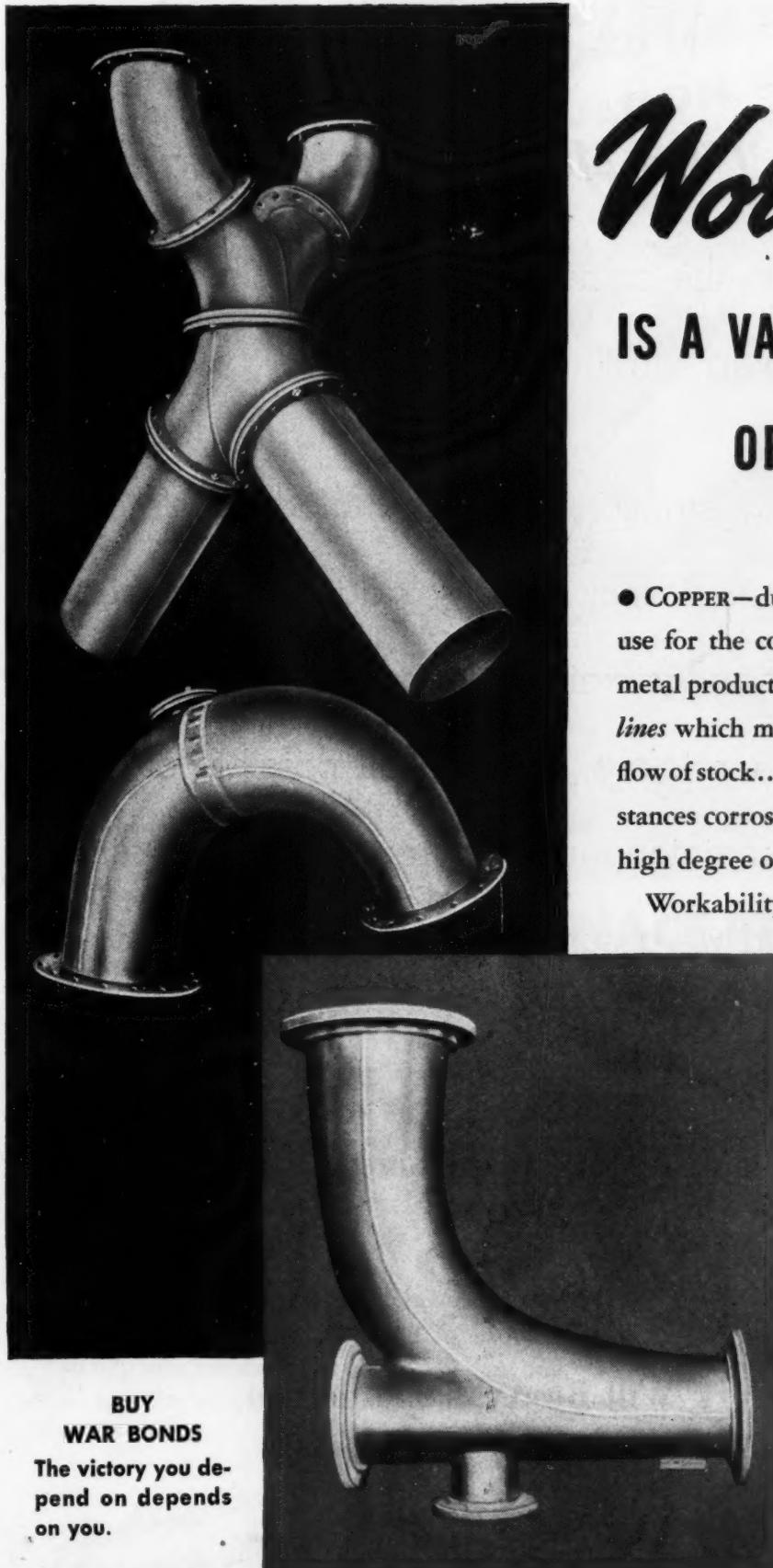
American Blower equipment to meet the problem exactly.

And the Ventilating Contractors of America—the same men who furnished and installed air handling equipment in so many war plants—will do your job expertly and economically.

If it's a war job, they can handle it today. If it's a part of your postwar planning, they'll be ready to do the job with American Blower equipment as soon as peacetime production is resumed. Remember, "good ventilation is good business."

AMERICAN BLOWER
AMERICAN BLOWER CORPORATION, DETROIT, MICH.
CANADIAN SIROCCO COMPANY, LTD., WINDSOR, ONT.

Division of AMERICAN RADIATOR & Standard Sanitary CORPORATION



BUY
WAR BONDS

The victory you de-
pend on depends
on you.

ANACONDA
from mine to consumer

Anaconda Copper & Copper Alloys

Workability IS A VALUABLE PROPERTY OF Copper

● COPPER—ductile and easily worked—is in wide use for the construction of many types of sheet metal products: Special fittings for *stock* and *pump lines* which must be free of sharp angles for easy flow of stock...*kettles* and *containers* handling substances corrosive to other metals and requiring a high degree of heat conductivity.

Workability is also an advantage for chimney and roof flashings, valleys and ridges where the long service life of copper makes it the preferred metal.

4452

THE AMERICAN BRASS COMPANY

Subsidiary of Anaconda Copper Mining Company
General Offices: Waterbury 88, Connecticut
In Canada: ANACONDA AMERICAN BRASS LTD.,
New Toronto, Ont.

Copper Stock Line and Dilution
Pump Connections for Paper Mill
—Fabricated from .160" (#8 SWG
Gage) Anaconda Copper Sheet,
Oxy-acetylene Welded using Ana-
conda Silver Bearing Copper Rod.
Flanges are steel. Fabricated by
R. A. Burroughs & Co., Norfolk,
Virginia.

The Old Saying—

“A Man Mayn’t Do More Than He Can”

applies to us today with the same rigidity that it has since we began cooperating to help win this war.

The recent "relaxing" of restrictions in the manufacture of civilian products definitely did NOT include any additional sheet-steel or man-power for making warm air furnace pipe and duct-work. We are continuing, as heretofore, to make all possible and permissible fittings for the maintenance and repair of warm-air distributing systems . . . and we assure you that, just as soon as our Government permits it,

A Complete and Abundant Line of H A N D Y P I P E

And Duct Work Will Be Available to You

*Meanwhile, We Are Filling Orders as Quickly as
the Availability of Materials Permits*

F. MEYER & BRO. CO., PEORIA, ILL.

THREATENED

MAKES FUEL CONSERVATION

NECESSITY IN EVERY HOME!

Coal Shortage

MAKES FUEL CONSERVATION A PATRIOTIC

Help your
customers
Save Fuel

WITH THIS



AUTOMATIC FURNACE REGULATOR SET

A Shortage of 30,000,000 tons of coal is predicted for the next heating season. This will be serious to home furnace users, for war plants, railroads and other essential users MUST get all they need. It's up to home users to make up this shortage by extreme conservation measures!

YOU CAN HELP . . .

The War Production Board has permitted production of fuel-saving A-P AUTOMATIC CONTROLS to help solve this dangerous shortage. You can help — by telling every furnace user in your community

Fuel-Saving
Starts With
CONTROL



of the danger, and the vital need of adding automatic furnace controls, and the advantages in warmth, comfort, and money-savings they will enjoy.

An Opportunity to SERVE . . . and to SELL

The A-P Automatic Furnace Regulator Set is available — for all types of heating systems, warm air, steam, or hot water. Tell your friends about them. They're inexpensive, easy to install, dependable in their sure and accurate control of room temperatures. They offer you an opportunity for ready sales volume and profits NOW.

AUTOMATIC PRODUCTS COMPANY

2470 NORTH THIRTY-SECOND STREET • MILWAUKEE 10, WISCONSIN



DEPENDABLE
FUEL CONTROLS

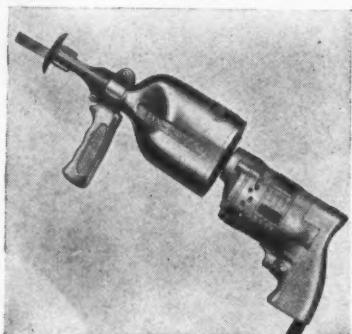
New Products . . . (See also page 92)

For your convenience in obtaining information regarding these items, use the coupon on page 110.

△ 59—Saw-Chief

Chicago Precision Equipment Company, 919 N. Michigan Ave., Chicago 11, announces a new attachment for electric drills to provide a portable power saw and file.

The device will saw into metal—casting or rod, wood, plastics and



other materials—by placing an ordinary hack-saw blade in the holder with the teeth toward the operator. It may also be converted into an automatic file by simply inserting a file in the same chuck or holder.

The Saw-Chief is of balanced ball bearing construction, built for heavy-duty cutting and to withstand hard

use. Pistol-grip handle permits the operator to guide and hold the device with ease. The Saw-Chief will attach to any electric drill with a $\frac{1}{4}$ -in. chuck.

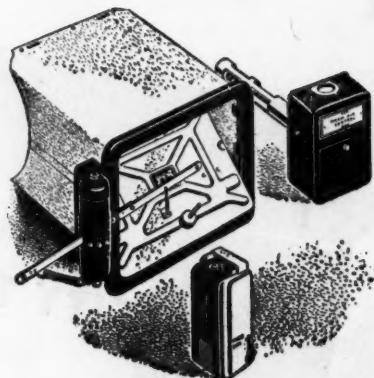
◆ 60—New Ironset Can

Fireline Stove & Furnace Lining Co., 1816 Kingsbury St., Chicago 14, announces a change in design of container for their Ironset asbestos fur-



nace cement, and attractively lithographed in green, black and white.

With this change in design, Ironset is again packed in 5 and 10-lb. cans, 60 lbs. per case. It also comes in 50 and 100-lb. drums.



• 61—Combustion Control System

Perfex Corporation, 500 W. Oklahoma Avenue, Milwaukee 7, offers a new thermostatically-regulated combustion control system for hand-fired heating plants, designed to save fuel and increase heating efficiency and convenience. Incorporated in this system are the new Barometric draft control with an attached Thermo-Draulic Damper Operator, the Magic Dial Thermostat, and a Limit Control.

The Magic Dial Thermostat registers changes in temperature, calls for more heat when needed and automatically checks the fire sufficiently in advance to prevent overheating of home. The Limit Control prevents damage from overheating and overshooting of room temperatures by automatically checking the fire when furnace temperature reaches a set maximum.



... a TRADE MARK that signifies
the **BEST** in SHEET
METAL FABRICATION

PEXTO has always been closely linked with major developments of the Sheet Metal Industry.

With a front rank War Rating, that same leadership will be resumed when the industry again returns to normal operation.

Specify PEXTO — A trade mark guaranteeing the best in performance and endurance.



CRIMPING AND BEADING MACHINES

THE PECK, STOW & WILCOX COMPANY

SINCE 1883

SOUTHBURY, CONNECTICUT, U.S.A.

GENUINE **SUNBEAM** REPAIR PARTS

Our SUNBEAM Plant is engaged totally in war production. When these demands have been met the manufacture of SUNBEAM Warm Air Products will be resumed promptly and zealously.

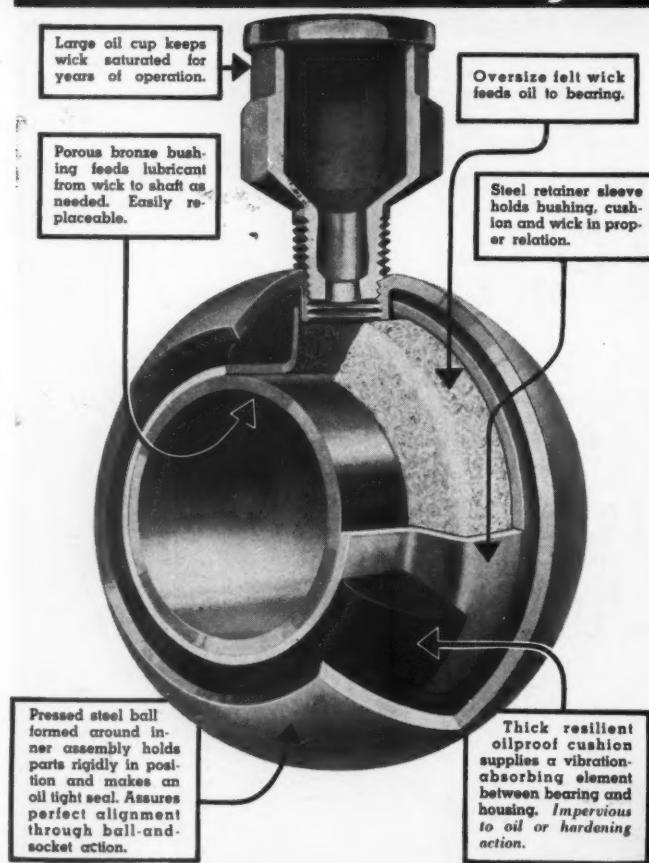
We are, regardless of the problem of production and cost, making genuine SUNBEAM Repair Parts available to users of SUNBEAM Products. The parts are produced from original patterns by skilled workmen, to meet the SUNBEAM standard of quality and dependability.

**BACK THE WPB FUEL CONSERVATION PROGRAM BY PUTTING
EXISTING EQUIPMENT IN GOOD ORDER TO SAVE FUEL**

**AMERICAN & Standard
RADIATOR & Sanitary**
New York CORPORATION Pittsburgh



No Other Bearing In Air Conditioning



has all these QUALITY FEATURES

In designing your after-the-war fans, blowers, and other devices requiring silent operation, perfect alignment and self-lubrication—include the Triangle Shock-Absorbing Pillow Block.

1. It is the only bearing for air conditioning that has a resilient oil-proof cushion scientifically built into the bearing—for silence and vibration absorption.
2. Ball-and-socket design for perfect alignment.
3. Scientifically streamlined for compactness, simplicity, strength and MINIMUM OBSTRUCTION TO AIR FLOW.

Cut-away view shows other features and illustrates how unique engineering has created a new type of silent bearing outstandingly different from the conventional.

Triangle design assures high efficiency and low cost operation.

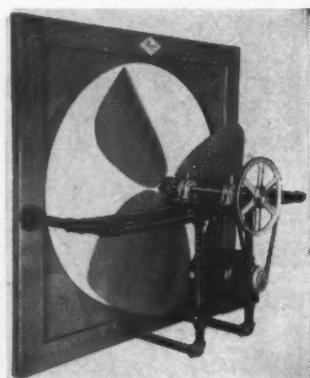
Write for quotations.

Complete pillow block
One of several types of mountings

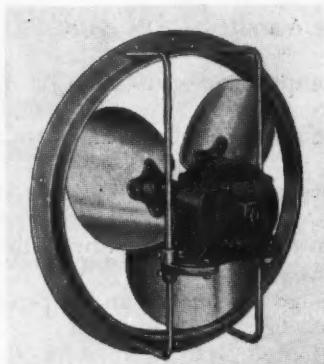
Patented

TRIANGLE MANUFACTURING CO.
392 DIVISION STREET OSHKOSH, WISCONSIN

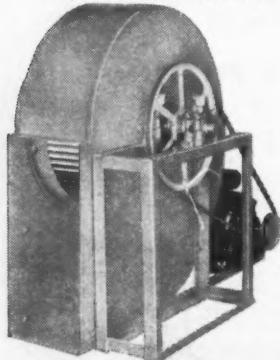
Meet Today's REQUIREMENTS with Properaire BLOWERS



VENTILATING FAN—36 inch
Propeller Type Belt Driven

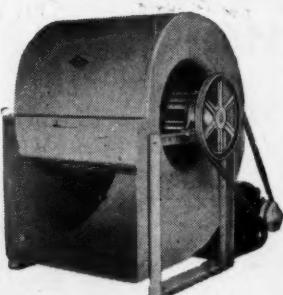


EXHAUST FAN No. 204-EP—20 inch
Clover Leaf Type Direct Drive

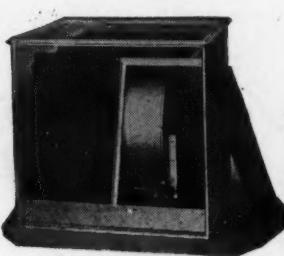


TYPE EB Belt Drive

• The Properaire Line gives you a well-rounded group of blowers for any air-moving task. They're easily adapted to your installation problems. They're priced right. Available now for prompt delivery.



"B" ASSEMBLY Belt Drive



SERIES 2000
Insulated Package Units



TYPE E
Direct Drive

GRAND RAPIDS DIE & TOOL CO.

1202 Godfrey Avenue, S.W.,

Grand Rapids 2, Mich.

New Literature

For your convenience in obtaining copies of New Literature use the coupon on page 110.

269—Safety Through Management

Division of Labor Standards, U. S. Department of Labor, Washington 25, D. C., offers free so long as the supply lasts a 20-page booklet entitled "Safety Through Management Leadership" aimed primarily at the smaller war plants which can rarely employ trained safety engineers. Because American industry has exhausted just about every source of manpower except the reserve now wasted by industrial accidents, the U. S. Labor Department is making a drive for a million fewer job accidents.

270—Theory of Soldering, Brazing

Eutectic Welding Alloys Company, Engineering Department, Room 1113, 40 Worth Street, New York 13, has just published a new four-page folder, "The Theory of Soldering, Brazing and 'Low Temperature' Welding." This leaflet tells how the Eutectic process was discovered. It explains what happens when the Eutectic welding alloy is deposited on the parent metal at low temperatures. It gives various definitions revelent to this new welding process, and it covers various applications discovered since Eutectic was introduced to the American market three years ago.

Free copies are available upon written request on a firm letterhead. Welding supervisors may obtain limited supplies to distribute to their workers.

271—The Future of Your Business

Committee for Economic Development, 285 Madison Ave., New York City 17, has issued a handbook entitled "Planning The Future of Your Business" setting forth concrete steps which may be taken by industrial employers in planning for high postwar levels of production and employment, prepared by a special committee of the association of Consulting Management Engineers.

The handbook is obtainable only through the local Committees for Economic Development now organized in 1408 communities in all parts of the country. (It is not obtainable from the national C.E.D. office).

272—Rivnut—The Blind Fastener

The B. F. Goodrich Company, Akron, Ohio, has just issued a new catalog section on its Rivnut, the modern blind fastener which doubles as a nut-plate, rivet or both.

Of particular interest is one page devoted to a pictorial step-by-step presentation of Rivnut installation. Another page is given to a chart showing all pertinent details on all types of Rivnuts. Methods of preparing the hole for the Rivnut, upsetting them, and a discussion of types and the realm of service for each is included.

Rivnuts, originally developed for the aeronautical field, are now available for varied industrial uses.

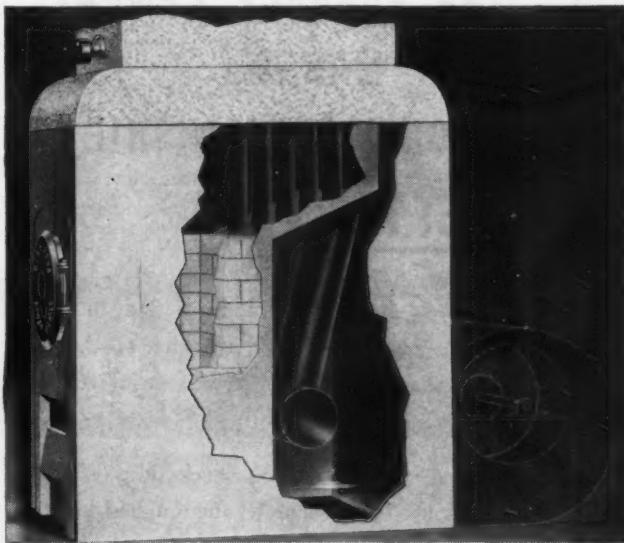
273—Welding With Anti-Spatter Fluid

The Midland Paint and Varnish Co., 9115 Reno Avenue, Cleveland, has just issued a new engineering bulletin describing in detail the practical and scientific tests made to determine the effects of using an anti-spatter fluid in welding, entitled "Engineering Information About No-Spat Welding Fluid."

This bulletin contains a concise report of a process used by a large metal fabricator to reduce mill scale formed during normalizing. It suggests a method of keeping welding jigs free from spatter. It also contains laboratory reports (illustrated) on tests for determining weld strength and weld soundness. Of interest is a report concerning the suppression of fumes during welding.

Now available!

**BERTOSSA POWER HEATERS
IN LIMITED QUANTITIES TO
QUALIFIED DEALERS**



Bertossa heating units for the past 2½ years have been supplying heat and air conditioning to navy bases, army camps and war plants.

But government requirements today have largely been filled. A limited supply of Bertossa Heating units are now available on priority to accredited dealers.

Leading engineers and architects have long appreciated the efficiency of Bertossa heating units. Built in a wide range of sizes from 150,000 to 2,800,000 B.T.U.'s, Bertossa units have an unusually compact arrangement of blower and heating unit. They have a unique type of down draft flue. They have 90% direct heating surface, and they can be easily adapted to complete air conditioning.

Your territory may be open—write us today.

BERTOSSA

Manufactured by JACKSON & CHURCH CO.

SAGINAW, MICHIGAN



THE FURNACE CEMENT THAT MAKES GOOD WORKMANSHIP BETTER!

IN new furnace installations and in all furnace repair work, the final touch of quality workmanship is the use of Tharco Asbestos Furnace Cement.

Tharco will not shrink, check or powder. It has been proven under the toughest kind of service conditions . . . it lasts longer, gives more satisfactory results.

Tharco is made from the finest materials by an exclusive Armstrong process which assures uniform high quality at all times.

Tharco users say, "Tharco adheres to both sides of a joint, making it gas tight and smokeless, yet it allows for normal expansion and contraction."

Let us send you free copies of a valuable folder, "The Proper Use and Care of Furnace Cement."



THE
ARMSTRONG
COMPANY

4065 So. LaSalle St.
Chicago

241 So. Post Ave.
Detroit

319 So. Crowley St.
Dallas

New Literature

For your convenience in obtaining copies of New Literature use the coupon on page 110.

274—Penetrating, Protective Paints

The Wilbur & Williams Company, Boston 16, is distributing a 6-page folder entitled "Penetrating, Protective Paints Cut Practical Painting Time From Hours to Minutes." Products covered are Totrust Rust Preventive Oil Paint, Totrust Enamel, Bondlite, Damcoate Enamel, Staincure, Brine-Pruf, Exterior Bondlite, Checkmate, Causticbond, W & W Penetrating Oil and Dye-Crete.

275—Attachments for Quickwork Rotary Shears

The Quickwork Division of Whiting Corporation, Harvey, Illinois, announces publication of Bulletin QW-120, featuring the applications and operation of attachments used on Rotary Shears. Illustrated with pictures and drawings, this eight-page bulletin enables the reader to understand the wide range of work that can be handled by these attachments. Circle cutting, slitting, joggling, and flanging attachments are all featured in this bulletin which may be had free upon request.

276—Welding Design Plates

The Hobart Brothers Company, Hobart Square, Troy 1, Ohio, offers "Practical Design for Arc Welding," Vol. 1, by Robert E. Kinkead, Consulting Engineer, Welding; 100 design plates, cloth bound, 8 1/2 x 11 1/2 in., price \$3.50 per volume, complete 3-volume set, \$10.00. This is the first of three volumes to be published following the original publication and distribution of a number of the design plates in loose leaf form.

A cross reference "Short Cut to Design Ideas" index saves time as it indicates the numbers of various design plates, that involve certain specific details such as bases, bosses, columns, frames, gussets, lugs, stiffeners, etc., that are common in many welding applications.

277—Sales with FHA Title I Loans

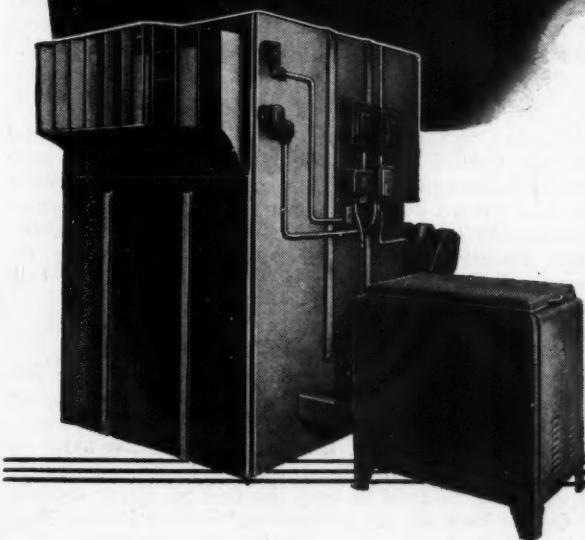
The Federal Housing Administration has just issued a new booklet for contractors, designed to aid in carrying out new Title I regulations, effective July 1, and entitled "Here's How to Make Sales and Satisfied Customers with FHA Title I Loans," being distributed through qualified lending institutions to dealers who originate Title I property improvement loans in connection with their sales.

The booklet aims to give the dealer essential operating facts needed to originate property improvement loans which are eligible for discount by a lending institution and for FHA insurance. Second, the booklet seeks to show what FHA expects of dealers who participate in the property improvement program.

Maximum loan amounts, terms and finance charges are discussed as well as the types of jobs which are eligible for financing. The Title I program is essentially a co-operative undertaking in which lending institutions and dealers have a part.

The Title I program is expected to develop rapidly when wartime restrictions on critical materials can be lifted. During the war, the program has been directed into three main channels: (1) Loans for conversion to provide additional living quarters for war workers; (2) Loans to finance home maintenance and repairs which are essential to health and sanitation, and (3) Loans to finance installations to conserve fuel, such as insulation, storm doors and windows, and weather stripping.

**Airtherm Direct-Fired
Unit Heaters**
Give You Warm Air Heat
Only Where and When
You Want It!



✓ You operate the Directtherm Unit only those hours when you need heat—absolutely no waste of fuel due to stand-by loss. There is no danger of freeze-up when the unit is turned off over night.

The Directtherm Heater has a minimum number of parts, high efficiency on the combustion chamber, comparatively low outlet temperature, and a horizontal high velocity air stream with adjustable wide angle of warm air delivery. Can be adjusted to give you heat only where you want it, when you want it.

The Directtherm Heater is scientifically built in 6 standard sizes with capacities from 300,000 to 1,500,000 BTU's.

Write today for bulletin giving complete details and specifications on this versatile, efficient heating unit.

AIRHERM
MANUFACTURING CO.

711 S. Spring Avenue

St. Louis 10, Missouri



A fascinating prevue of profit-packed post-war prospects for live heating equipment dealers. Hot off the press . . . with information as fresh as today's front page news. Drop us a line, NOW, with mailing instructions for YOUR copy.

IN THE HEART OF THE
MOST CONCENTRATED
AUTOMATIC
HEAT MARKET
IN THE
WORLD



CATSKILL METAL WORKS, INC. CATSKILL, N.Y.

ONE OF THE LARGEST PRODUCERS OF ANTHRACITE STOKERS

NORTHWESTERN

Is Doing Its Best Job For
YOU!

YES, we're doing everything possible to give you good service, to fill your orders as promptly as conditions permit.

If we have your requirements in stock, we ship immediately. If not, we make every effort to fill your order as quickly as possible.

In any event, when you order repair parts from Northwestern you are sure of the finest quality obtainable. Always ask Northwestern first. Accept nothing less than Northwestern quality at any time!

For the best possible service under today's conditions and for the highest quality repair parts under all circumstances deal with Northwestern!

NORTHWESTERN STOVE REPAIR CO.

662 W. Roosevelt Road Chicago 7, Illinois

New Literature

For your convenience in obtaining copies of New Literature use the coupon on page 110.

278—Do-All Hammer and Drill

Wodack Electric Tool Corporation, 4627 W. Huron St., Chicago 44, is distributing a new folder—Bulletin 442—describing the Wodack Do-All Combination Electric Hammer and Drill and accessories. The bulletin is complete with descriptions, prices and table of sizes of star drills.

279—Building Necessities

Majestic Company, Huntington, Indiana, is distributing a 20-page catalog of Majestic Building Necessities—attic ventilators, basement sash, coal chutes, cesspools, cistern rings and covers, doors, fireplace dampers, ashpit dumps, fireplace equipment, flue thimbles, garbage receivers, grates, incinerators, mail boxes, milk and package receivers, column bases, strainers, ventilating bricks, wheel guards, and window wells.

280—Fuel Oil Record Envelopes

Wayne Oil Burner Co., Fort Wayne 4, Indiana, is distributing fuel oil record envelopes—manila, size 4 1/8 by 9 1/2 inches—ruled to show customer's name, address, quota, date of fuel oil delivery, inventory on hand, gallons received, total gallons to date, price, and total cost, and the envelope is to be used to keep the fuel oil ration coupons in. On the back are suggestions on "How to Reduce Your Heating Costs," with space for the dealer's name.

These envelopes are designed and intended for oil companies, oil burner dealers, etc., for distribution.

281—Farm Building Roofing Survey

American Zinc Institute, 60 E. 42nd St., New York City 17, offers "A Survey of Roofing on Farm Buildings" presenting figures on roofing in the farm field. Price \$1.00. The basic data were developed by the Institute's fieldman through actual personal visits to 7,600 farmers in 36 states, east of the Rocky Mountains.

Information covers size and type of farm, number and kind of buildings, roof areas, type and condition of roofing, and preference for future purchases of roofing, in tabular form for each state.

282—Kit of Merchandising Helps

Perfex Corporation, 500 W. Oklahoma Avenue, Milwaukee 7, offers free to heating and plumbing dealers a new kit of merchandising helps. Tying in closely with the tremendous government fuel-saving controls program, this material is designed to cover all local promotional aspects, including window and counter displays and presentations, calls at customers' homes, direct mail, and local media such as radio announcements, newspaper space and publicity.

The display offered as part of this kit mounts the new complete Perfex Combustion Control System for hand-fired heating units, and is wired for actual operation. The display automatically demonstrates how the damper operator and new square barometric draft control respond to the thermostat adjustment.

The large portfolios in the kit can be used on sales and service calls, as counter pieces, or as wall banners and window backgrounds. The direct mail piece, supplied in quantity, is a small rendition of the large portfolio. These units are in several colors and relate the story of fuel savings through control of combustion—in a rapid-fire, non-technical fashion.

Also included are radio announcement scripts, a small mat for insertion in local advertising, a sales letter, and a news story for local papers.

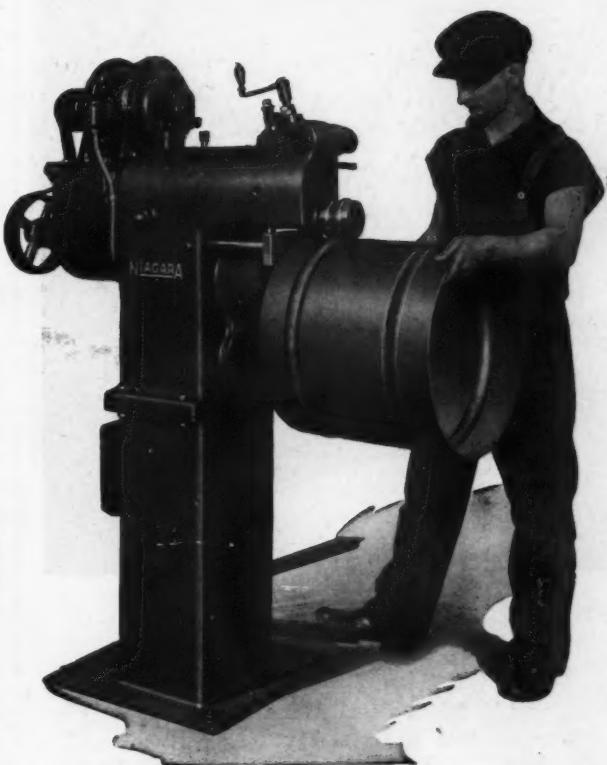
This motor driven combination machine with interchangeable rolls combines power operation, ability to handle heavy gage work, and easy operation.

Foot control of clutch and upper roll allows the use of both hands for holding and guiding the work.

Interchangeable rolls make one machine capable of burring, turning, wiring, beading, crimping, flanging, slitting and circle cutting. Beading and crimping can be done in one operation.

Gears and shafts are enclosed. Gear box contains intermediate gears and clutch, all running in oil. Clutch gives instant hand and foot control and can be locked for continuous operation.

Write for Bulletin 75A. NIAGARA MACHINE & TOOL WORKS, Buffalo, N. Y. District Offices: Detroit, Cleveland, New York.

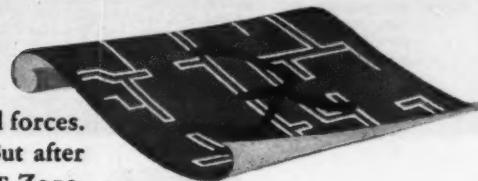


There's only one important job now . . . backing up the armed forces. We've been concentrating on it for more than two years. But after victory, our dealers will have a new "sales weapon": PAYNE Zone-Conditioning, post-war successor to old-fashioned central heating.

* Meanwhile, let's all buy more, and more, War Bonds.

**TODAY
WAR WEAPONS**

**TOMORROW
Payne
ZONE-CONDITIONING**



PAYNEHEAT
30 YEARS OF LEADERSHIP
Payne FURNACE & SUPPLY CO., INC., BEVERLY HILLS, CALIF.

**GAS FUEL
(HAS)
EVERYTHING**

REQUEST NEW ZONE-CONDITIONING FOLDER

... just published for the information of families who plan to build or remodel. Write for sample copy.

© 1944 PAYNE FURNACE & SUPPLY CO., INC.



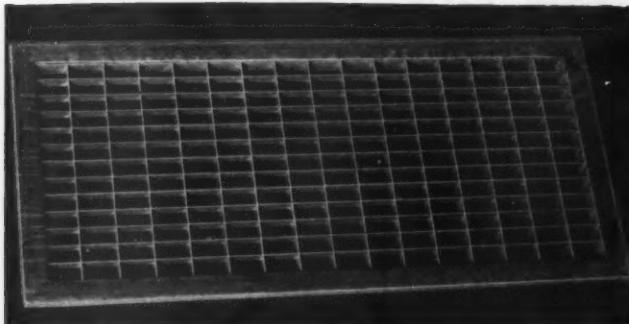
H&C

**NO. 210 "NO-FLEX"
FLOOR REGISTER**

The finest floor items that money will buy are available at prices you'd have to pay for just the rank and file variety. Use the **BEST**, it **ALWAYS** pays! Standardize now and Post-war on H & C No. 210 "NO-FLEX" Floor Registers, No. 265 Return Air Faces! Prompt shipment from stock.

AVAILABLE FOR ALL ESSENTIAL NEEDS:
Gravity items Nos. 210, 265, 130, 330, 623, 653, 250, 2250; A. C. Designs Nos. 69, 74, 75, and 88. Also complete accessory line. See catalog No. 42 for details.

H & C NO. 265 "NO-FLEX" RETURN AIR FACE



H&C

HART & COOLEY MANUFACTURING CO.

**World's Largest Manufacturers of
Registers, Grilles, Furnace Accessories**

HOLLAND • MICHIGAN

New Literature

For your convenience in obtaining copies of New Literature use the coupon on page 110.

283—High-Speed Sawing Machine

Continental Machines, Inc., 1301 Washington Avenue South, Minneapolis 4, is distributing a four-page bulletin illustrating and describing the new DoALL Zephyr high speed friction cutting machine.

This bulletin gives specifications and the high operating speeds of these new machines, showing their wide application in the shaping and fabricating of light alloys, plastics, wood, rubber and sheet metal.

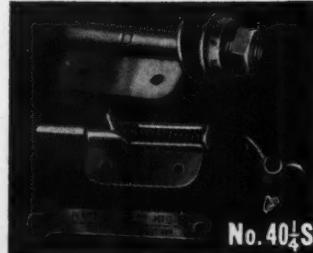
Pictures show the convenience of operation and safety factors of these machines as they shape sheet metal, aluminum castings, wood, plastics, and sponge rubber.

284—Aids to Technical Writing

University of Minnesota, Engineering Experiment Station, Institute of Technology, Minneapolis 14, offers "Aids to Technical Writing" by Richard C. Jordan and Marion J. Edwards, Bulletin No. 21, 117 pages, price 50 cents.

This bulletin contains essential information concerning the mechanics of preparing and publishing technical and scientific papers, bulletins and magazine articles. It takes up the preparation of materials; it discusses bibliography and footnote forms, the use of numbers, the handling and arrangement of equations and tables, proofreading, abbreviations and letter symbols. There are sections on the use and preparation of photographs, drawings and charts, and a complete list of standard graphical symbols.

H&C DAMPER REGULATOR SETS



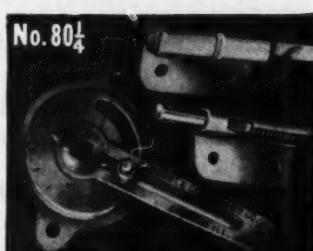
ECONOMY TYPE. Three ways to install: 1. With lock nut but without handle (for tamper-proof setting). 2. With handle and lock nut. 3. With handle and wing nut. Nut prevents damper vibration. Handle always indicates position of damper (Patent 2,146,142). Furnished with handy snap end bearing. Complete set in carton. Made only with $\frac{1}{4}$ " bearings.

LIST PRICE.....No. 40 1/4 S.....\$0.30



BRACKET TYPE. Nut holds damper securely, preventing vibration. Handle which indicates position of damper, may be left in place permanently or removed after adjustment (to prevent tampering). Snap End Bearing on $\frac{1}{4}$ " size, Solid Bearing on $\frac{3}{8}$ " size. Each set individually packaged.

**LIST PRICES.....No. 50 1/4.....\$0.40
No. 50 3/4.....\$0.60**



DISK TYPE. Like all H&C sets, this set is equally adaptable to splitter or regular dampers. Snap End Bearing on $\frac{1}{4}$ " size, Solid Bearing on $\frac{3}{8}$ " size. All parts are rust proofed. Complete set in carton.

**LIST PRICES.....No. 80 1/4.....\$0.40
No. 80 3/4.....\$0.60**

*See your jobber or write
for literature and sample.*

HART & COOLEY MANUFACTURING CO.
HOLLAND, MICH. • PHILADELPHIA OFFICE: 1600 ARCH ST.



A Larger and Better PREMIER Line—Plus a Great New Dealer Plan

A great new heating market is going to open up TOMORROW — and we're planning now for that tomorrow. We want to give PREMIER Dealers the finest, most complete line of equipment we've ever produced. We also want to give PREMIER Dealers the most helpful cooperation — expert factory assistance with their engineering and merchandising problems.

You can depend on it — when TOMORROW comes, PREMIER will be ready, and you'll be fortunate to have the exclusive franchise for this great line.

Also:
COOLING EQUIPMENT
REGISTERS
DUCTWORK
AUTOMATIC CONTROLS

PREMIER FURNACE COMPANY
Dowagiac, Michigan

PREMIER

The Year 'Round Line

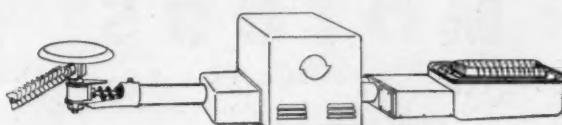


These are typical Pocahontas Stoker installations in government-sponsored housing projects.

Here's a Stoker that Sells! Because it does more!

• Pocahontas Stokers can burn fine sizes of low-priced coal, which affords a big saving to owners. Bin-Feed Models eliminate back-breaking coal shoveling. The patented universal knuckle makes it possible to install a Pocahontas Stoker from any angle and at a surprising distance from the coal bin.

There are many features, such as the "Lifetime" chrome nickel retort, that make Pocahontas Stokers an exclusive line. Now is the time to get set with a Pocahontas Dealer Franchise. The 25-ton-a-year stoker release means dollars in your cash register.



POCAHONTAS FUEL COMPANY INCORPORATED

"ORIGINAL"

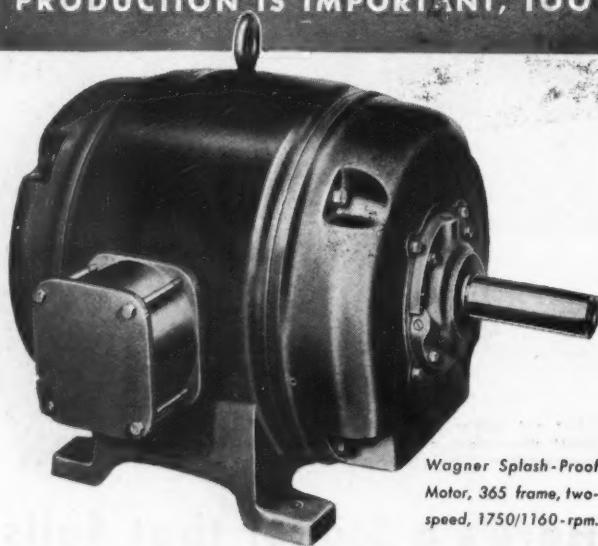
POCAHONTAS

THE STOKER OF TOMORROW-TODAY!

338 EAST 131ST STREET
CLEVELAND 8, OHIO

POSTWAR PLANNING?
...Why
Certainly!

**BUT THE RELIABILITY OF THE MOTORS
YOU NEED RIGHT NOW FOR WAR
PRODUCTION IS IMPORTANT, TOO**



Wagner Splash-Proof
Motor, 365 frame, two-
speed, 1750/1160-rpm.

Sure, we know that postwar planning is necessary. Every manufacturer must stay abreast of the times and be ready to again serve its customers after this war is won—but Wagner realizes there is a war to win and it is our first job. Wagner is now turning out more motors than ever before—working around the clock to furnish these motors wherever they are needed to help in the war effort. If you need motors now to help speed up the war effort—consult Wagner.

Wagner MOTORS

Write FOR BULLETINS

MOTORS
TRANSFORMERS
UNIT SUBSTATIONS
INDUSTRIAL BRAKES
BRAKE LINING

M44-38

BACK THE ATTACK—BUY U. S. WAR BONDS

Bulletins MU-183 and MU-182 describe
and illustrate the complete line of Wagner
motors. Bulletins
MU-7B and MU-
30B give complete
service instructions.



Wagner Electric Corporation

ESTABLISHED 1891

6371 Plymouth Avenue, St. Louis 14, Mo., U. S. A.
ELECTRICAL AND AUTOMOTIVE PRODUCTS

New Literature

For your convenience in obtaining copies of new literature use the coupon on this page.

285—Combustion Control

Schwitzer-Cummings Co., 1125 Massachusetts Avenue, Indianapolis, is distributing a 4-page folder covering their Stokol Combustion Control System with Thermostatic Regulation—one complete matched set consisting of the Thermo-Draulic Damper Operator, the new Barometric Draft Control, the Magic Dial Thermostat, and the Precision Limit Control.

286—Fiberglas Thermal Insulation

Owens-Corning Fiberglas Corporation, Nicholas Building, Toledo 1, Ohio, has just published a 20-page booklet, "Fiberglas Thermal Insulation," which tells the equipment manufacturer how Fiberglas thermal insulation can aid him in selling his products after the war. The properties of Fiberglas thermal insulation, and its peace-time and war uses are described in text and illustrations.

287—"Clecoing"

The Cleveland Pneumatic Tool Company, 3781 East 77th Street, Cleveland 5, offers Bulletin 87—second edition—illustrating and describing Cleco sheet holders, Style "M." They describe "Clecoing" as a method of temporarily clamping sheets together prior to riveting. Cleco sheet holders are applied with pliers and may be inserted and removed from one side of the sheet. Each sheet holder forces the sheets together with a pressure of about 50 pounds, and is repairable.

288—Blue Print Patterns

G. L. Gray, 507 Grand Avenue, New Haven 3, Connecticut, is distributing a letter-head size sheet listing the various sets of full size blue print patterns available—elbows, tees, 45 deg. branches, trunk lines, elbow chart, circumference chart—time savers in ventilation and blow pipe work.

289—Fleet-Welding

The Lincoln Electric Company, 12818 Coit Road, Cleveland 1, is distributing "Fleet-Welding"—Bulletin No. 440—containing many new techniques on arc welding, greatly increasing the speed of the process and also cuts costs.

Subjects covered include "arc force"; effect of penetration, cost reduction, factors affecting production speed, and general information for use of procedure tables. There are procedure tables which list plate thickness, electrode size, current, melt-off rate, arc speed, number of passes, feet of joint welded per hour and pounds of electrode per foot of weld—butt welds, fillet and lap welds, and corner welds.

FOR YOUR CONVENIENCE

American Artisan, 6 N. Michigan Ave.
Chicago, Ill.

Please ask the manufacturer to send me more information about the equipment mentioned under the following reference numbers in "New Products" and "New Literature." (Circle numbers in which you are interested):

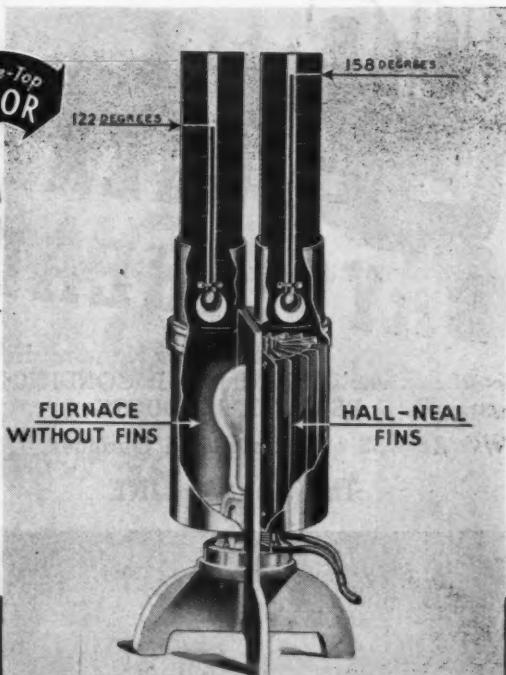
54	55	56	57	58	59	60	61
269	270	271	272	273	274	275	276
277	278	279	280	281	282	283	284
285	286	287	288	289			

Name _____

Company _____

Address _____

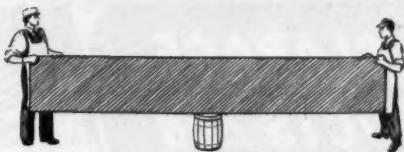
Are you Manufacturer—Jobber—Dealer—



*When You Show Them
the Difference "FINS" Make*

YOU'LL SELL MORE "VICTOR FURNACES"-EASIER!

**HALL-NEAL
FINS**
More Hot Metal Heats More Air



MORE HOT METAL HEATS MORE AIR

The additional metal in VICTOR furnace fins in one 9 1/2 ft. wide piece, even in the 24" size furnace, is 23 FEET LONG.



Dark lines show VICTOR FINS on each side of furnace. Air to be heated must RUB on a hot surface just as the air rubs on airplane motor cylinder fins to take heat from the motor.

IT'S THE HOTTEST FURNACE DEMONSTRATION IN THE FIELD

This little demonstrator has "Fins" on one side, none on the other and is heated by a light bulb. Two identical thermometers register the temperature of air from each side. It is simple, it is honest, it is convincing. The thermometers may be changed from side to side. The Fins may be changed from one side to the other. It PROVES that more hot metal heats more air-faster! It proves that with FINS—the desired amount of heat may be obtained with a lower fire (less fuel). In homes—in large plants—this Victor "Fins" demonstrator makes more sales—easier. It holds their attention... IT GIVES YOU SOMETHING EXCLUSIVE and CONCRETE TO SELL—THAT IS PROVED BEFORE THEIR EYES.

WRITE FOR the Hall-Neal dealer proposition. Your inquiries are welcomed. "VICTOR" Furnaces have been a standard of quality since 1890.

• • VICTOR "JUMBOS" FOR THE BIG JOBS ARE AVAILABLE NOW

VICTOR "JUMBO" furnaces are built in sizes delivering up to 2,550,000 B.T.U. per hour. It takes no more effort to sell the big jobs, with our assistance, than the little jobs. Increase your earnings and decrease your competition with "JUMBO" sales.

OUR ENGINEERING STAFF,
headed by Guy A. Voorhees, is always at the service of VICTOR
Dealers.



HALL-NEAL FURNACE Co.

1326 N. CAPITOL AVE.

INDIANAPOLIS 7, INDIANA

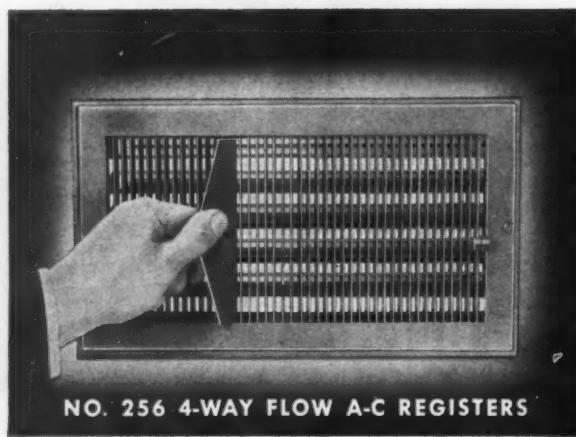


GREAT DAYS AHEAD

For the Clear-Planning Heating Contractor who DESIGNS his AIR-CONDITIONING around U. S. REGISTER PRODUCTS.

TWO STYLES of Unparalleled Qualities.

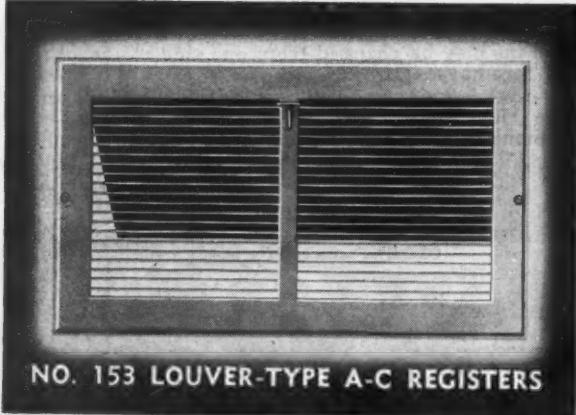
The No. 256 LINE



NO. 256 4-WAY FLOW A-C REGISTERS

Four Way Flow—Multiple Valve. The "FINISHING-TOUCH" to a HIGH-CLASS FORCED-AIR HEATING SYSTEM.

The No. 153 LINE



NO. 153 LOUVER-TYPE A-C REGISTERS

Horizontal Grille-Bar Design with Single Valve—Perfect Lever Operation.

Gives a TONE of HARMONIOUS REFINEMENT to Any Forced Air Heating System at Very Competitively Low Cost.

Complete Your Catalog File Now with U. S. Catalogs

41AC—Air Conditioning Registers

41 G—Gravity Registers

41 F—Gravity & Air Conditioning Fittings

UNITED STATES REGISTER CO.
BATTLE CREEK, MICHIGAN
MINNEAPOLIS • KANSAS CITY • ALBANY

With the Manufacturers

The Barger-Colman Company, Rockford, Ill., announces the appointment of the Wain Engineering Company, Omaha, Nebraska, as its distributor for control and air distribution products in the Omaha territory.

R. W. Helms, general manager of sales, Berger Manufacturing Division, Republic Steel Corporation, Canton, Ohio, announces the appointment of Alex U. Steenrod as manager, Steel Building Products Sales.

Mr. Steenrod comes to his new position from the Milcor Steel Company where he was manager of the Canton plant.

Inland Steel Company, Chicago, announces that Neale E. Stearns, Manager of the Department of Business Procedures, in addition to serving in his present position, has been appointed Assistant to Joseph L. Block, Executive Vice President in Charge of Sales. For the ten years prior to his coming with Inland in January 1940, Mr. Stearns had been engaged in management engineering. He was formerly a partner in McKinsey, Kearney & Co.

General Electric announces the appointment of G. R. Prout as manager of the air conditioning and refrigeration division of the appliance and merchandise department. He will be located in Bloomfield, N. J., where headquarters of the company's air conditioning and commercial refrigeration activities are located.

Prior to his new appointment, George Prout was manager of the industrial control division in the company's general office at Schenectady. He has been with G-E since his graduation from M.I.T. in 1923 where he obtained his B.S. and M.S. degrees in electrical engineering. He was a member of the M.I.T. cooperative course at G-E's Lynn river works from 1920 to 1923. Mr. Prout succeeds J. P. Rainbault.

"Use CLARAGE PRODUCTS and Repeat Business Comes Easy!"

This nationally known, nationally accepted fan equipment helps you land desirable jobs—helps you KEEP desirable customers. It will pay to figure with us on any air handling or conditioning project. Write for Clarge catalog.



FURNACE FANS



UNIT HEATERS



EXHAUST FANS



VENTILATING FANS

COMPLETE AIR CONDITIONING
• COOLING
• VENTILATION
• FACTORY HEATING
• MECHANICAL DRAFT
• FANS AND BLOWERS
FOR INDUSTRIAL NEEDS

Clarge Fan Company, Kalamazoo, Mich.

APPLICATION ENGINEERING OFFICES IN ALL PRINCIPAL CITIES

With the Manufacturers

H. P. Mueller, president of L. J. Mueller Furnace Company, Milwaukee, Wisconsin, also president of the National Warm Air Heating and Air Conditioning Association, has recently been elected president of the Milwaukee Rotary Club for the fiscal year starting July 1, 1944.

President William B. Hubbard of the Cherry Rivet Company of Los Angeles, California, announces the appointment of new resident representatives.

In charge of the Detroit territory will be William M. Rosborough, M.E., with offices in 704 Stephenson Building.

In the New York territory, Harold B. Thomas and P. J. St. James will conduct their operations from 80 Broadway.

H. Dale Cook has joined the Controls Division of Perfex Corporation, Milwaukee, in a sales engineering capacity.

Mr. Cook comes to Perfex from the General Controls Company, Glendale, California, having served that company's Chicago branch for the past five years.

Minneapolis-Honeywell Regulator Co., Minneapolis, announces the appointment of Ralph H. Metcalf as Zone Supervisor for the Air Conditioning Controls Division in the Cleveland area.

For the past eight years, Metcalf has specialized in air conditioning controls, making his headquarters in the St. Louis office of the company and at the main plant.

Carnegie-Illinois Steel Corporation, 436 Seventh Avenue, Pittsburgh 30, has announced the appointment of Robert J. Ritchey as manager of the Market Development Division of the Sales Department, formerly known as the Sales Promotion Bureau.

This Division, formed in 1936, was originated to develop opportunities for new uses for steel, as well as to expand the older and better known uses of the product.

Otto G. Tinkey was recently employed by Penn Electric Switch Co., Goshen, Ind., as manager of the company's St. Louis branch office located at 4030 Chouteau Ave. Mr. Tinkey, a graduate electrical engineer, has had more than twenty years of engineering and selling experience in the commercial refrigeration and heating markets.

Before joining Penn, Mr. Tinkey was the St. Louis representative for Copeland Refrigeration Company and was also engaged as consulting engineer for various St. Louis manufacturers.

The directors of Payne Furnace & Supply Company, Inc., Beverly Hills, California, peacetime heating manufacturers now devoted to war production, announced the election of officers at their recent quarterly meeting, as follows: President, El Roy L. Payne, former vice-president and general manager, succeeding the late Daniel W. Payne, his father; and, as vice-president, John H. Keber, former manager of the wholesale sales division. Joe H. Wilson, who continues as treasurer, was also appointed a director, and Ruby M. Sorber continues as secretary of the company.

Carroll E. ("Borie") Lewis has joined Perfex Corporation, Milwaukee, as vice-president and manager of the Controls Division. Mr. Lewis comes to Perfex from the Delco Appliance Division of General Motors Corporation, Rochester, where he has served as general sales manager for the past five years.

A pioneer in the air conditioning field, Lewis has served as a consultant and as head of his own company. He has been president of the Oil Heat Institute since 1941, and has also been active in the Stoker Manufacturer's Association and in the American Society of Heating and Ventilating Engineers.

M. C. Beard has been appointed assistant sales manager of The Thatcher Furnace Company, Garwood, N. J., and will assist Sales Manager Carl Sahler. Mr. Beard is the oldest member of the active sales force.

The NEXT TWO PAGES

Show you how
to enter the
big new market
NOW OPEN to
warm air heat-
ing dealers . . .



BLOWING THE FOAM OFF 425 BARRELS OF BEER...BOREAS LOST THE CONTRACT TO ALLEN

—who doubled for the God of Winds!

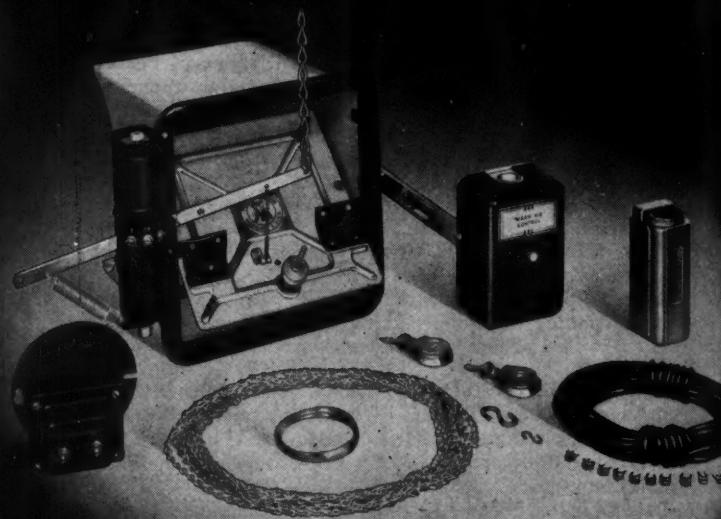
The Columbia Brewing Company, St. Louis, Mo., were faced with an unusual ventilating problem. An original steam jet exhauster had proved costly and had added to an already troublesome excess of heat. Allen substituted a fan section in the exhaust stack and the problem was licked. Excess heat and gases that had been causing heavy foaming and making capacity operation difficult now took to their heels. Full charge of 425 barrels could now be brewed, even with the man-hole open for observation. Here, as in many cases, Allen has been able to render valuable service to industry. If you have any ventilating problem involving the removal of heat, dust, fumes, or moisture you can get a realistic appraisal of the factors involved and a recommendation on proper procedure.

THE *Allen* CORPORATION
ENGINEERED VENTILATION FOR INDUSTRY

Here Is Your Controls P

BRINGING YOU DIRECT LOCAL PARTICIPATION IN THE

Your new *Modern* Fuel-Saving *System*



**Millions of people are thinking
fuel savings right now...**

Turn the tremendous national sentiment for fuel conservation into action in your local community by offering this new complete fuel-saving system now. Millions of radio, newspaper, poster, and printed messages have reached and are reaching the American public this summer and fall. Tie-in your sales program right away and help solve the critical fuel crisis ahead.

*Fuel-Saving
Starts With
CONTROL*

Your new *Powerful* Sales-Making *Kit*

PERFEX BRANCHES AND DISTRIBUTORS

Boston 16, Mass.
PERFEX CORP.
131 Clarendon St.

Chicago 10, Ill.
PERFEX CORP.
510 N. Dearborn St.

Detroit 3, Mich.
STOKER SERVICE CO.
19170 Woodward Ave.

New York 17, N. Y.
PERFEX CORP.
370 Lexington Ave.

Philadelphia 40, Pa.
PERFEX CORP.
3701 N. Broad St.

Pittsburgh 21, Pa.
T. F. CAMPBELL CO.
1013 Penn Ave.

Phoenix 2, Ariz.
SOUTHWESTERN CORP.
17 W. Monroe St.

Portland 1, Ore.
LARRY HARRINGTON CO.
7415 S. W. Canyon Dr.

St. Louis 3, Mo.
HESTER-BRADLEY CO.
2835 Washington Blvd.

St. Paul 4, Minn.
THERMAL, INC.
2448 University Ave.

Salt Lake City 5, Utah
R. S. TRINNAMAN
1912 Herbert Ave.

San Francisco 5, Calif.
P. J. O'MEARA CO.
50 Hawthorne St.

Spokane 8, Wash., EDWARD SENNA, 45 W. Riverside St.

Write or phone
today for
complete
information . . .

Is Program for 1944-45

THE GREATEST FUEL CONSERVATION PROGRAM IN HISTORY

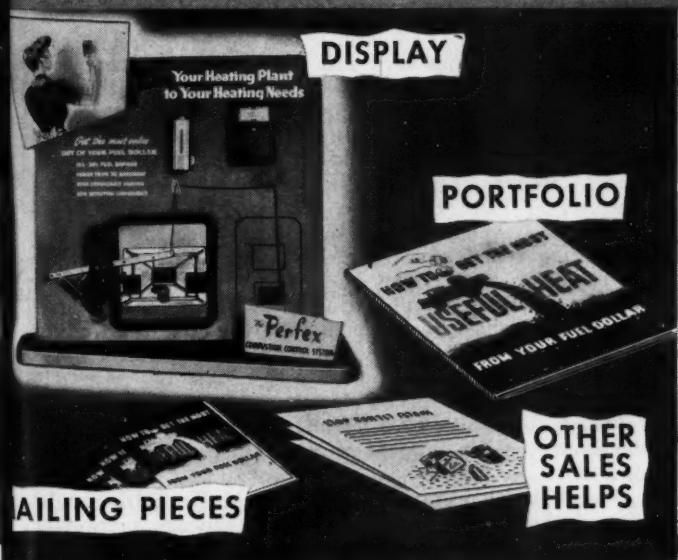
Perfex COMBUSTION CONTROL SYSTEM

The first truly complete system. More than the usual "regulator set"—a tuning system for hand-fired heating plants that keeps the draft at the exact rate to suit the fuel used, size of heating plant, and size of building, in addition to maintaining comfortable temperatures. In controlling combustion, it reduces clinker formation, burns fuel to a fine ash. Damper operator and draft control install as a single unit. No makeshift hookups or complicated chain arrangements needed. Compare this fuel-saving system now with other "sets"—for complete control and for individual performance features.

Barometric Draft Control with attached Damper Operator—light-weight, square vane pivoted on rolling strap-type hinges that can't stick or clog—protected against corroding furnace gases. Square design means 20% greater air capacity. Damper operator has no gears or ratchets, operates quietly and positively from hydraulic action, has safety cut-off for power failure.

The Magic Dial Thermostat. The highest development in thermostats. Anticipates heating requirements in advance of actual room temperature.

The Limit Control saves heating plant, cuts hazards, by limiting excessive temperatures.



DISPLAY—Colorful, sturdy display built around the Combustion Control System—wired for actual operation. Just plug into wall socket . . . the system automatically regulates draft control vane and miniature damper door included on display.

COUNTER PRESENTATION—A rapid-fire review of the system, in simple, straight-forward style, beautifully printed in color, for point-of-sale use at the counter, also for your sales calls at customers' homes.

DIRECT MAIL PIECE—Small rendition of large portfolio, for your mailing purposes. Space for imprint.

OTHER SALES HELPS—Radio announcements, sales letter, news story for local papers, newspaper mat of system.

A COMPLETE KIT TO HELP YOU SELL AND INSTALL THESE SYSTEMS NOW



Perfex CORPORATION

420 W. OKLAHOMA AVE., MILWAUKEE 7, WIS.

Gentlemen: Tell me how I can cash in on the new fuel-saving controls market now.

Name.....

Address.....

City..... State.....



This is a special new hollow type Cherry Rivet.
Don't use self-plugging Cherrys for tacking.

Critical jobs that have to be just so . . . jobs that are hard to hold together—bends and curves and shifty materials . . . tack 'em temporarily with Cherry Tack Rivets. Easy? On riveted jobs just flip in Cherrys every so often. For welding, drill a few holes and pull in a few Cherry Rivets. For bonding, stitching, soldering—fastening of any sort—metals, plastics, wood, rubber or fabrics—the job is easier if it's first tacked with Cherry Rivets. No obstacles, no clamps—economical—easy to remove. And of course Cherry Rivets work blind—one man on one side of job only.

Get the complete story of the Cherry system—riveting with a pull instead of a pound. Write for Handbook A-43. Cherry Rivet Co., Department A-200, 231 Winston Street, Los Angeles 13, California.



CHERRY RIVETS, THEIR MANUFACTURE AND APPLICATION ARE COVERED BY U. S. PATENTS ISSUED AND PENDING



With the Manufacturers

Kurt J. Spencer was recently named general sales manager of the combined production of the Grand Rapids Die & Tool Company, Div. the Expert Die and Stamping Company, Grand Rapids, Michigan, manufacturers of the Properaire line of air-moving equipment.

The New York factory branch of General Controls, Glendale, Calif., manufacturers of automatic pressure, temperature and flow controls, now occupies new and larger quarters in the Architects Building, 101 Park Ave., New York City.

John Hammond is branch manager.

The Cleveland branch also moved into new quarters recently at 3224 Euclid Avenue, Cleveland with Branch Manager L. E. ("Rusty") Wetzel in charge.

Appointment of Harold T. Bodkin as sales promotion manager, is announced by A. W. Shields, general sales manager Evanair division, Evans Products Co., Detroit, Mich.

Mr. Bodkin has been actively associated with advertising and sales promotion work for twenty years, entering this field shortly after his discharge from the Navy, with which he served during the first World War.

Just prior to joining Evans Products Co., Bodkin spent one year with the Ford Motor Co., where he wrote the Students' Manual and Instructor's Manual used in the training of Army personnel at the Ford Tank Engine School.

Mr. Bodkin's new duties with Evans Products Co. will center upon national sales promotion for the new Evanair line of space heaters, water heaters, floor furnaces and other heating equipment manufactured by the company.

Ray P. Farrington has purchased the controlling interest in W. F. Potts, Son & Co., Inc., Philadelphia 7, from the Balderston Estate, and has been elected a Director and made Chairman of the Board.

Mr. Farrington has been with the War Department for the past three years, during which time he organized the Inspection Department, training nearly 3,000 men for the Philadelphia Ordnance District, after which he was asked to set up schools for the training of Ordnance Personnel. He was then called to the Signal Corps as Chief Engineer of Plant Expansion Division.

After the Annulment of the Steel Code, N.R.A., Mr. Farrington remained with the American Iron and Steel Institute for three years in Industrial Relations work, visiting all the steel mills in the U. S. East of the Mississippi River, which gave him a wide acquaintance in the industry, as well as a knowledge of the different steel companies.

The A. O. Smith Corporation, Milwaukee, Wisconsin, announces the appointment of H. L. Bilsborough as manager of stoker sales.

One of the pioneers in the stoker field, Mr. Bilsborough entered this business in 1928 in the Chicago market—first with the Iron Fireman Manufacturing Company, where he advanced to district representative, and in January of 1934 he became associated with Fairbanks, Morse & Co., as sales manager of their newly formed stoker division. He was promoted to manager of the division in July of 1938. Mr. Bilsborough is credited with developing the first fully enclosed or streamlined stoker for domestic use.

Mr. Bilsborough also introduced many new ideas in sales promotion. The yearly stoker conventions which he conducted, contributed largely to the development of efficient dealer and distributor outlets.

Mr. Bilsborough has always been active in the affairs sponsored by the Stoker Manufacturers Association, having served as a member of the executive board. He also has been a member of the Stoker Advisory Committee to the WPB since the beginning of the war.

Register Expectations

(Continued from Page 68)

not have any manpower available with which to increase production, even if we were allowed to do so by the WMC. Under the circumstances outlined, this revision in the regulation will not affect us at least for the next few months."

J. H. SMART, Sales Manager,
Tuttle & Bailey, Inc.

◆ "The only relief that revision of M-126 will give will be to permit the manufacture of registers and grilles in all areas, regardless of critical zoning. Beyond this there will be no relief as the steel situation is even more critical right now than it has been at any time during the war period. Allotments are very short and CMP-4B applications are greatly cut, and there undoubtedly will not be enough steel allotted to meet the requirements of normal register production. It would be very inconvenient if any publicity leads the trade to believe that registers are going to be obtainable in any quantities for prompt shipment, etc., as we are circumscribed by the ability to get steel and also by the manpower situation, which is still very critical and difficult."

C. J. PEARSON, Vice President,
United States Register Co.

◆ "Our reactions to the amendment of WPB Order M-126 of August 7, 1944, removing registers and grilles from List A, are as follows:

1. No manufacturing "boom" of registers until building opens up.
2. Labor shortages will prevent furnishing all the registers which are now required.
3. Materials are still difficult to obtain and CMP-4B's won't be increased unless preference ratings are high enough to warrant such increases. Hence, any new business previously held up by Order M-126 must be made principally from idle or excess inventories.
4. Many manufacturers will still concentrate on war contracts to hold their supply of labor until the labor situation eases."

I. M. Golan, Sales Manager
Waterloo Register Company

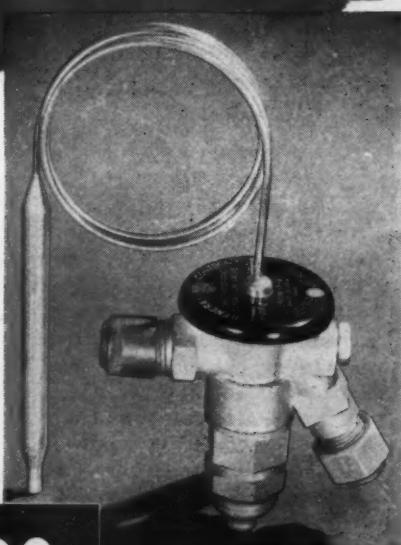
◆ "For our guess with regard to how much we expect our grille and register business to be increased as a result of the amended M-126, the best answer I can give is that our business will be affected in proportion to the extent that restrictions are lifted on such items as fans, coils, compressors, and the rest of the primary equipment which must be obtainable before the need for grilles and registers arises."

C. J. BRAATZ, Sales Manager,
Automatic Controls & Air Distribution,
Barber-Colman Co.

Anybody Help?

A READER has asked for the name of a product and the name of the manufacturer of a product which may be used as a substitute for the rubber lining formerly used on the inside of blow pipe elbows to reduce wear. Can any reader give a name and a source of supply?

A DEPENDABLE CONTROL
for Refrigerants



V-200

THERMAL
EXPANSION
VALVE

Thoroughly tested in field use, the V-200 is proving its day-in day-out reliability for an increasing number of users. They endorse its many outstanding features, such as—

- ✓ Easily-removed orifice cartridges eliminate need for stocking several sizes for low tonnage installations.
- ✓ Interchangeable orifice cartridges assure proper sizing of capacity to load.
- ✓ Ample diaphragm plus balanced, low-rate adjusting spring.
- ✓ Carefully-lapped hard-faced ball insures tight shut-off.
- ✓ Frictionless pusher pin.
- ✓ Semi-liquid charged; may be placed in ambient temperatures higher or lower than bulb temperatures with no loss of control.
- ✓ Unmatched sensitivity.

For complete specifications on the V-200 and other refrigerant controls in the broad GENERAL CONTROLS' line, write for your copy of Catalog 52. Send request to your nearest GENERAL CONTROLS branch or sales and service agency.

GENERAL CONTROLS
301 ALLEN AVENUE
BRANCHES: Atlanta, Boston, Glendale 1, Calif., Philadelphia, San Francisco, Denver, Chicago, Kansas City, New York, Cleveland, Detroit, Dallas

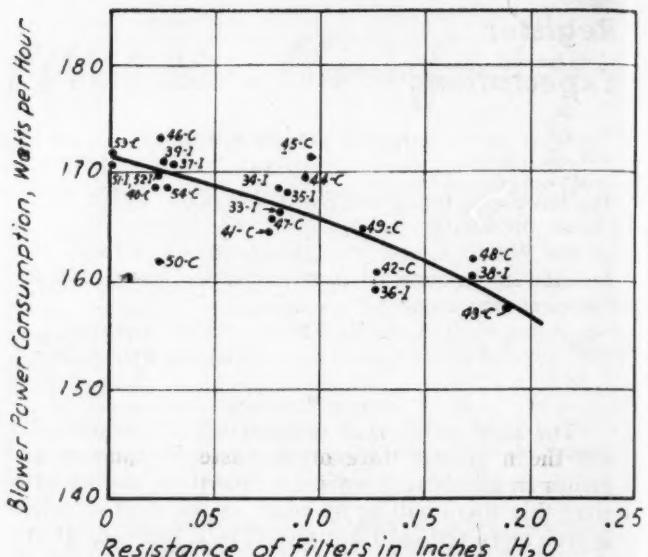
Effect of Dirty Filters

(Continued from page 71)

The blower power consumption as illustrated on curve sheet No. 3 does not fall in line as accurately as might be expected but this is due to the fluctuation of the line voltage. The data indicate that as the filter resistance increases and the air volume circulated by the fan decreases (refer to curve Sheets No. 1 and No. 2) the decrease in air volume causes a decrease of power consumed by the fan motor.

Heat Losses

The amount of heat passing up the flue does not correlate with the rest of the data without making allowances for various factors. The first of these factors is that whenever the burners turn off, due to intermittent operation, some heat continues to pass up the flue. The draft diverters reduce this quantity to a minimum by taking most of the air directly from the room and passing it up the flue. A certain amount of air, however, is drawn through the combustion chamber causing a heat loss. Another important factor that causes variables in these figures is the chimney draft. An attempt was made to maintain this at .2" H₂O but it varied as much as .18 to .22" H₂O in a few seconds, even with the draft regulator installed. Before installing the regulator, the variations were much greater than this. Due to the manner of determining heat loss up the flue as compared with the manner of determining heat output, it is better to correlate values that are more definitely measured than to use those which are more or less dependent



Curve *3 Power consumed by blower of forced warm air furnace equipped with clean and dirty filters.

This chart shows that the power consumption of the fan motor decreased as the filters became loaded.

on differences, as is the case of radiation, and other losses and values that cannot be accurately controlled.

These tests show that it is important to have ample filter surface in a forced warm air unit to obtain the rated heat output. In the case of the unit tested, the filter area was equivalent to a flow of 1,600 C.F.M. or

INDEPENDENT Baseboard Registers

Two-Piece, with removable grille—adjustable fins

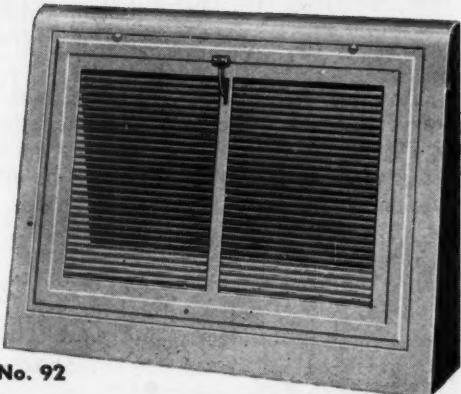
Always Leading
Always Progressing



• This No. 92 register is a leader in Independent's extensive line of registers, cold air faces and grilles. Fins, regularly set to deflect air flow slightly upward, are easily bendable to direct air flow straight outward or downward as required. Scientific design affords large open area with minimum air resistance.

We welcome inquiries for present needs. When Victory comes, you can depend upon Independent quality and variety for all requirements of registers, cold air faces and grilles for air conditioning and warm air heating—backed by more than 46 years of leadership.

Send for Catalog 41-G.



No. 92

THE INDEPENDENT REGISTER CO.

3747 EAST 93RD STREET, CLEVELAND, OHIO

A.R.A. SHEETS

for Non-Metal Duct
Work in the Heating,
Ventilating and Air
Conditioning Field

Keep an ample supply of
these nationally known, easy
working sheets in stock for
fabricating duct work of
every type, as illustrated.

Don't wait until the last minute
for any kind of sheets in
this changeable market.

Your jobber can now supply
you with preferred A.R.A.
Sheets and in any quantity.

Asbestos clad A.R.A. Sheets
are tough yet flexible—rigid
but not brittle—fire-proofed
and moisture-proofed—will not
dry out, crack, crumble or
chip. A.R.A. Sheets have a
high insulating value (K. .45
B.T.U.)—good sound deadening
properties—and they
deaden metallic rattle.

SQUARE

ROUND

RECTANGULAR

Intricate and unusual fittings
can easily be fabricated from
A.R.A. Sheets.

CARTON CONTENTS
20 Sheets 33" x 48" Per Carton
40 Sheets 16 1/2" x 48" Per Carton

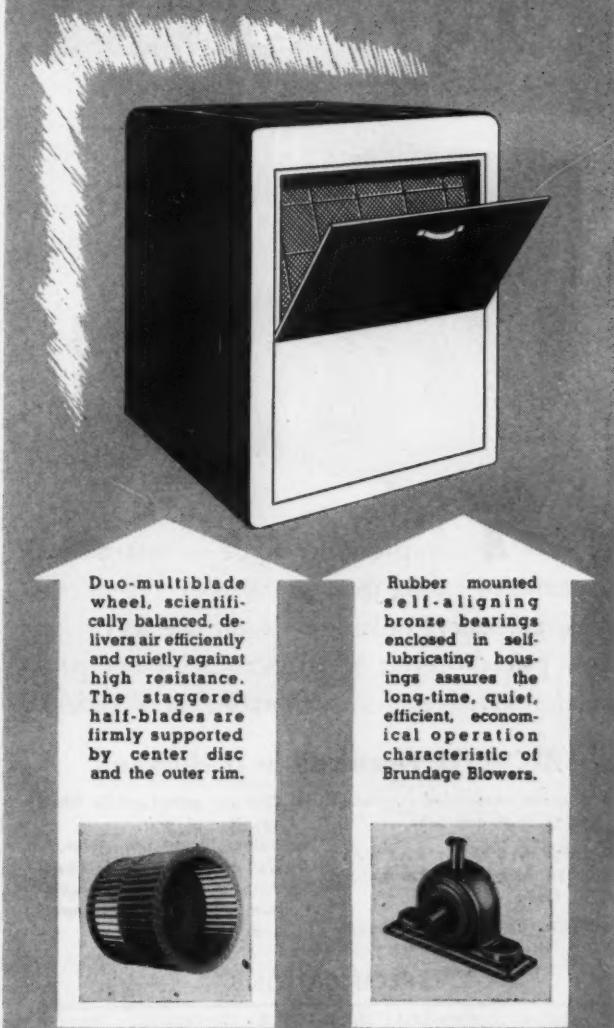
Shipping Weight
Approximately 100
lbs. per Carton.

Write today for the free 16-page
illustrated booklet No. 89-A

GET GENUINE A.R.A. SHEETS FROM YOUR JOBBER

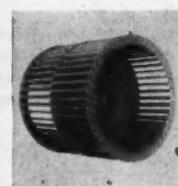
GRANT WILSON, INC.
141 WEST JACKSON BLVD., CHICAGO 4, ILLINOIS

When you sell
BRUNDAGE
BLOWERS
You sell satisfaction



Duo-multiblade
wheel, scientifically balanced, de-livers air efficiently and quietly against high resistance. The staggered half-blades are firmly supported by center disc and the outer rim.

Rubber mounted
self-aligning bronze bearings enclosed in self-lubricating housings assures the long-time, quiet, efficient, economical operation characteristic of Brundage Blowers.



Above are just two of the many superior features incorporated in Brundage Blower-Filter Package Units. Brundage makes a complete line . . . models and sizes adaptable to a wide range of requirements. Write your jobber or furnace manufacturer.

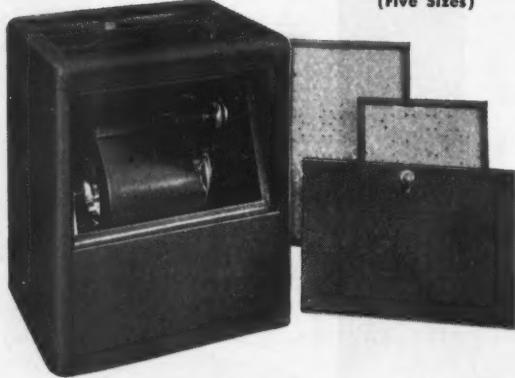
THE **Brundage**
COMPANY
BLOWER SPECIALISTS
510 N. PARK STREET
KALAMAZOO 11, MICH.

COMPACT ★ EFFICIENT ★ LOW COST

BLOWER-FILTER
package unit

The LAU 400 Series
BLO-ETTE

400 SERIES BLO-ETTE ASSEMBLY
(Five Sizes)



A complete package in attractive streamlined casing that combines all the sturdiness, efficiency, quietness of our larger units. Low priced—result of large assembly-line production. Delivery on acceptably rated orders.

BLO-ETTE Features in a Nutshell

- Shipped assembled . . . will go through any door.
- Large size access door . . . easy to get to the motor or filters.
- Pulley belts easily changed.
- Cold air return easily fitted into top of unit.
- Automatic cut out motor.
- Top motor mounting. Keeps motor away from floor moisture. Permits more compact housing.

SPECIFICATIONS

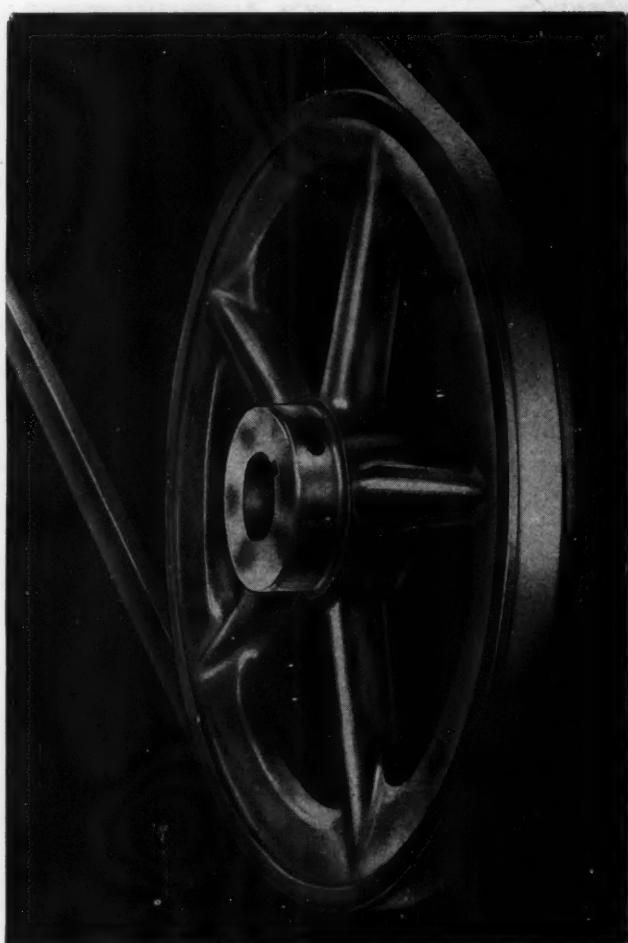
Unit No.	Furnace Size	C.F.M.	H.P.	No. of Filters
400	18"	850	1/6	1
401	20"	1000	1/6	2
403	24"	1250	1/4	3
404	28"	1680	1/4	4
405	30"	2150	1/3	4

Write us direct or contact your nearest jobber
for full information, dimensions, prices.

**THE LAU
BLOWER COMPANY**
DAYTON 7, OHIO

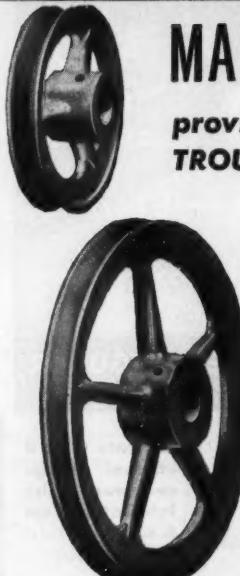
WORLD'S LARGEST MANUFACTURERS OF FURNACE BLOWERS

Engineers and fabricators of general Air Handling Equipment
Single Inlet and Double Inlet Blowers
Propeller Fans • Accessories



MAUREY V-PULLEYS

provide a L-O-N-G step toward
TROUBLE FREE Performance



Our long experience in designing and manufacturing V-Pulleys, our complete understanding of their uses, and the finest materials—all are combined in making Maurey V-Pulleys the very best for use in Air Conditioning and Refrigeration Systems as well as for Fan and Blower insulations.

For unfailing, continuous operation be sure to specify Maurey V-Pulleys.



**MAUREY
MANUFACTURING CORP.**

2915 South Wabash Avenue
CHICAGO 16, ILLINOIS

three times the area that is recommended for industrial use. With one of the filter spaces blocked off entirely and a clean filter installed in the other opening, the unit still delivered the rated capacity on continuous operation of the burners. The practice of installing somewhat greater filter area than is actually required is very good practice because it insures longer periods between filter changes.

The author wishes to acknowledge the helpful suggestions and criticisms given us by Mr. F. G. Sedgwick, Chairman of Warm Air Heating Institute, Committee on Research; Prof. S. Konzo, Special Research Professor of Mechanical Engineering, University of Illinois, and Prof. D. W. Nelson, Associate Professor, Mechanical Engineering, University of Wisconsin.

Amendments

Interpretations

(Continued from Page 56)

purchasers authorized by WPB. It was released for sale through Amendment 4 to the Copper Conservation Order M-9-c, issued August 4, 1944.

A total of 669,947 square feet of screening is available. It is suitable chiefly for maintenance and repair work. Widths are principally 17 inches and narrower, and the major portion is in two meshes, 14 and 16. The material is in both bright and antique finish, and in three weights—standard, medium and light.

The screening is held in the following cities: Baltimore, Boston, Chicago, Cleveland, Cincinnati, Detroit, Los Angeles, Milwaukee, Minneapolis, New York, Philadelphia, Pittsburgh, Providence, San Francisco, Seattle and St. Louis.

On Our Industry Front

(Continued from Page 58)

those that are, are few and far between, and are mostly under five hundred dollars. We, in our industry, believe that where jobs are done over five hundred dollars, that they are so highly competitive that no Washington Agency has the least conception of what a contractor has to face to be able to obtain a job, and then be able to show an all-over profit for the year.

Let me ask you frankly if your office will guarantee that a loss on any one job will be made up through your efforts, or are you only interested in seeing that no job makes too much profit?

On what basis would your office figure a comparable job when there never was a contractor in the building industry who ever had such a thing in his set up? No two jobs are alike. There can be ten or more buildings or installations planned alike by an Architect, but labor and weather always make them come out, on the final check, entirely different.

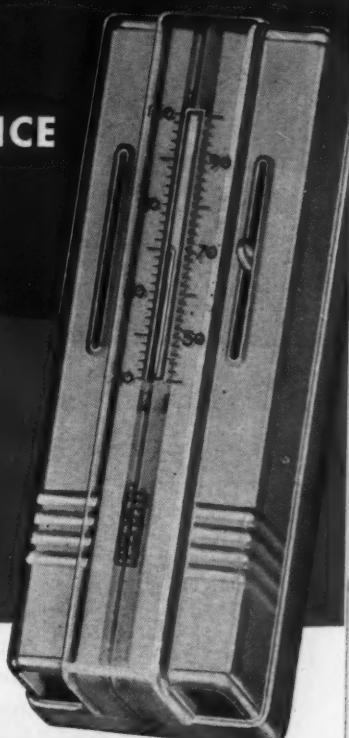
Just how do you propose to control the amount of work a mechanic will do, or the elements? We would like to have your office enlighten us, because many of us in this business, have been trying to cope with these situations for fifty or more years without the help of any bureaucratic Washington set up, and it is altogether possible that you



YOU CAN
RECOMMEND

Gleason-Avery THERMOSTATS

WITH
CONFIDENCE



No. 130 Furnace Safety Unit Package for hand-fired domestic heating systems is complete with thermostat, damper motor and all accessories, ready to install. List price—\$19.50. Direct orders accepted when accompanied by wholesaler's name.

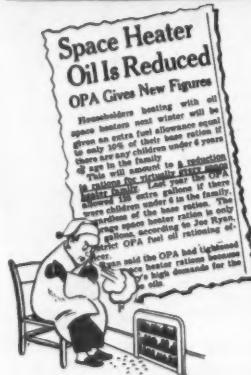
Ease of installation—
simple operation—
positive safety—
trouble-free service . . . these are popular Gleason-Avery features which appeal to contractors, dealers and home owners alike.

- ✓ The G-A Damper Motor can be mounted in any position. Two-wire low voltage control.
- ✓ Finger-tip adjustments and synchronized settings make the G-A Thermostat easy to set and read. One-degree sensitivity.
- ✓ The G-A Straight Line Control means no sprockets or rotating arms to get out of order . . . no chain-tangling.
- ✓ No danger from overheating. In case of electric power failure, the improved G-A Spring Return closes draft and opens check automatically . . . instantly.
- ✓ Gleason-Avery Thermostats are smartly styled in lustrous, mar-proof Mirror-Lite finish.

Approved
by
Anthracite
Industries
Laboratory

Gleason-Avery, INC.
AUBURN, N.Y.
A RELIABLE NAME IN TEMPERATURE CONTROLS

Help Heater Customers to Winter Comfort on REDUCED FUEL OIL RATIONS



This Sale is a Wartime Necessity

Because our invasion navy needs more light fuel oils, rationing boards are being instructed to reduce oil rations for space heater users for the coming winter season!

But you can help all those heater customers of yours to steady comfort next winter — by installing an A-P Thermostatic Heat Regulator Set on every heater using A-P Constant Level Oil Control. Easy to install, inexpensive, this Automatic Control Set quickly pays for itself in fuel savings, greater convenience, and more uniform heating. No priorities needed.

Fuel saving is a NECESSITY today — and a SALES OPPORTUNITY for you! Write for bulletin and prices on A-P Thermostatic Heat Regulator Sets

*Fuel Saving Starts With
CONTROL*

AUTOMATIC PRODUCTS COMPANY
2452 North 32nd Street
Milwaukee 10, Wisconsin



DEPENDABLE
Oil Control Valves

people may have arrived at a solution of which we are still in the dark.

It is our feeling that MPR-251 is an unnecessary, arbitrary, and unworkable regulation. Because of the fact that re-roofing, repairing, heating and re-siding jobs are so highly competitive, and because of so many "GYPS" operating, it would be utterly impossible to regulate that work without a police force of undetermined numbers, just as during the old NRA. I know, because unfortunately I was Code Authority for eight Western New York Counties, and know whereof I speak.

We believe that OPA would be doing a much better service to the nation by devoting its present energies, with its present help, toward enforcing maximum prices on foods than to try to regulate the remnants which are left of a once important industry.

Everyone buys clothing and necessities of this kind. Only a small fraction of the people are interested in a new roof, or metal work, or a heating system, or a new building, and then at such infrequent times that they are of comparative little importance with the everyday necessities of life. Let's see some of the everyday necessities of life under proper control first before the OPA tries to widen out its control and cause further unrest, confusion and breakdown of the home front morale.

Please do not forget that many sons and daughters of this industry are fighting and dying for the principles of the four freedoms under the Fifth Amendment to our Constitution. Also, do not forget the important fact that the part of the contracting business that we represent is "small business."

Small business has a high mortality rate, and will always have one as long as a free economic system permits any citizen to risk his own and his relatives' and friends' savings in a bet that he has qualities to make the enterprise a success. If he has those qualities he wins independence for himself and his backers. If he hasn't he goes broke and goes back to work for someone else.

No one has been more harassed than the small business man by the multitude of regulations that have come out of Washington, particularly since the bureaucrats have, by the excuse of the war, interfered in every industry and transaction of business. Frankly, we want the Government to get off our toes.

I am quite sure that the thousands of contractors in our industry will not cooperate under your proposed program unless they are guaranteed against loss or an all-over profit for the year. Of course, no Government Agency can guarantee this to our contractors, so we stand on our claim that the order, if enforced, will only cause further confusion within our industry, increase the paper shortage through the filing of thousands of forms, make additional help necessary on both sides, and increase the cost of OPA, and finally do no good except to make more unnecessary jobs of which there are untold thousands too many now in Washington.

In conclusion, I can only say, let OPA stop these unnecessary dictatorial, and unreasonable rulings, regulations and interference with our many thousands of sheet metal and roofing contractors all over the country so that they can continue to make an honest dollar, and help the next ten generations pay our war debt.

Sincerely yours,
Sheet Metal Contractors' National
Association, Inc.,
Clarence J. Meyer,
National Secretary

Sub-contractor Meetings

UNDER the joint sponsorship of the Smaller War Plants Corporation and Army and Navy procurement officers, meetings of subcontractors and smaller prime contractors will soon be held in all parts of the country. The purpose of the meetings is to interest contractors in making preparation for contract set-

Ready for the post-war Starting Gun!



No Reconversion Problems! No Retooling!

No Production Delays

on **JOHNSON OIL BURNERS**

DEALERS who sell Johnson Oil Burners can count on full support and full co-operation the instant that peacetime production and selling get the "GO" signal.

There will be no transition-period delays...no waiting for us to get our plant and our organization back into 100% production. Why? Because our wartime job and our peacetime job have been identical...the building of super-efficient oil burners. Only the ultimate users have been different.

When the pent up demand for new houses and new heating equipment is finally turned loose, Johnson dealers can start at the crack of the gun. Keep this fact in mind if you contemplate taking on an oil burner dealership. It can make a vital difference in your postwar profits.

We will gladly send you the full story of what a Johnson dealership has to offer you. S. T. Johnson Co., 940 Arlington Ave., Oakland 8, Calif., and 401 No. Broad St., Philadelphia 8, Pa.



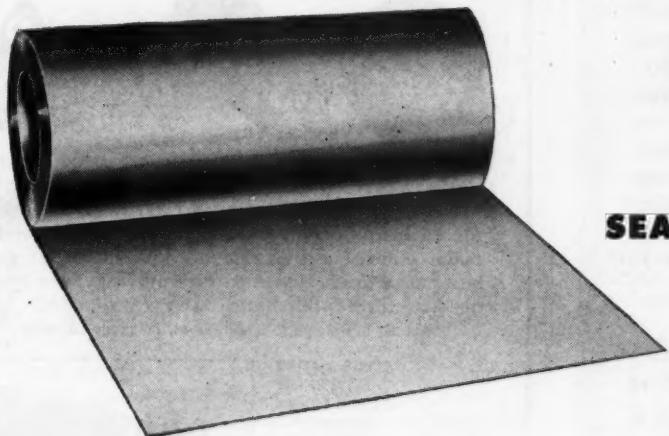
If you have an immediate problem

Ask us about it. Quite possibly we can supply what you need or tell you how and where to get it. We'll gladly do all we can to help.

S. T. JOHNSON CO.

41 years of engineering and building fine Oil Burning Equipment

The modern, streamlined roofing terne



Carried in stock by leading jobbers

Follansbee

8 pound coated

SEAMLESS TERNE ROOFING

Made in 50 foot rolls without cross seams. Easy to handle, easy to install. Save solder, save labor. Reduce costs, improve appearance. Widths—14", 20", 24" and 28". Furnished unpainted, painted one side only, or painted both sides. Ask your jobber for prices and details.

FOLLANSBEE STEEL CORPORATION

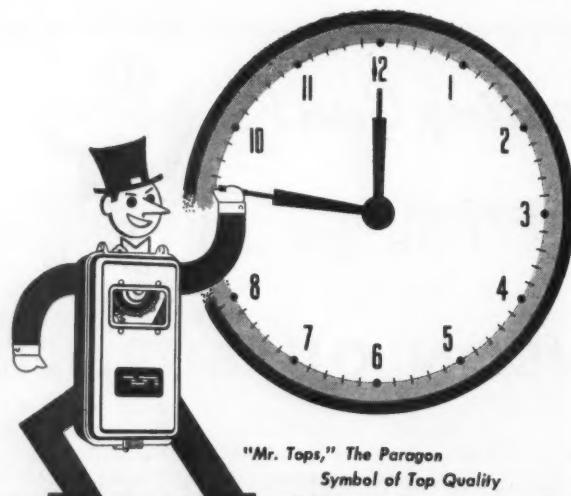
GENERAL OFFICES • PITTSBURGH 30, PA.



Sales Offices—New York, Philadelphia, Rochester, Cleveland, Detroit, Milwaukee.

Sales Agents—Chicago, Indianapolis, St. Louis, Nashville, Los Angeles, San Francisco, Seattle; Toronto and Montreal, Can. *Plants*—Follansbee, W. Va. and Toronto, O.

ALLOY BLOOMS, BILLETS, BARS, SHEETS & STRIP • COLD ROLLED CARBON SHEETS & STRIP
POLISHED BLUE SHEETS • ELECTRICAL SHEETS & STRIP • SEAMLESS TERNE ROLL ROOFING



"Mr. Tops," The Paragon
Symbol of Top Quality

LET "MR. TOPS" CONTROL YOUR TIMING

of AUTOMATIC HEATING, VENTILATING,
LIGHTING, PUMPING OR FLUSHING
OPERATIONS . . .

Paragon 700 Series Time Switches are equipped with 6" calendar dials which make one complete revolution every 7 days. Dial trippers can be independently set for different daily ON and OFF schedules. Settings can be made in advance for an entire week. Any day or days operations may be omitted entirely on a pre-set program.

Each day of week clearly separated from other days; graduated into hours and half hours; day and night distinctly separated. Operations from ON to OFF or from OFF to ON can be set as close as three hours apart and can be separately adjusted throughout each 24 hour day in the week.

Write for a complete bulletin.

**PARAGON
ELECTRIC
COMPANY**
719 Old Colony Bldg.
Chicago 5, Illinois

Paragon 700
Series Time
Switch

Paragon Chicago
BUILDERS OF ELECTRICAL EQUIPMENT SINCE 1905

lement and to convey basic information on the principal elements of contract termination procedures.

Under the agreement, the SWPC field offices will cooperate with the armed services and civic bodies in sponsoring and arranging the meetings. The program will be in charge of Army and Navy procurement officers and will include such subjects as: Explanation of the Contract Settlement Act; the subcontractor's claim; interim finance; SWPC's services on contract settlement; settlement procedure by the Army and the Navy Department; and plant clearance of excess property.

At all meetings a question and answer period will be held with queries from the audience submitted to a panel made up of the various Army and Navy representatives. Time and place of the meetings will be announced locally.

Production of Models

THE War Production Board has issued rules under which manufacturers may be authorized to produce post-war experimental models if they do not divert manpower or facilities from war work to do so.

These rules, contained in Priorities Regulation No. 23, grant blanket authorization to any person to engage in production of models, that orders from WPB heretofore prevented them from making, provided such activity does not cost more than \$5,000 a month in a single plant, including all direct costs such as materials, components, sub-assemblies, labor, designing and drafting.

Furthermore, authorization to make experimental models costing more than \$5,000 a month in a single

SHEARS



Whichever you want, a straight cut or irregular curve—it's as easy on the inside as the outside, on either flat sheets or formed work. No starting holes needed for an inside cut. A Libert is easy to operate—foot pedal control allows use of both hands to guide work at all times. It shears cleanly! Edges are smooth; need no further finishing. Write for Bulletin.

Made in sizes up to 60-in. throat, 10-gauge capacity

CIRCLE CUTTING
ATTACHMENT
Included as Standard
Equipment With
This Machine

2-Q-43

Libert
Hi-Speed
SHEAR

**LIBERT MACHINE
COMPANY**
GREEN BAY, WISCONSIN



plant may be obtained from the War Production Board by sending four copies of an application (Form WPB-3879) to the field office nearest to the plant in which the work is to be done.

To assure that production of experimental models does not interfere with output of war and essential civilian goods, WPB has provided, in addition to the requirements that labor and manpower may not be diverted, that:

1. Only the minimum number and minimum size of models necessary to prove the suitability of the article for commercial production or use may be made. This does not permit trial production runs of experimental models.

2. Materials made available specifically for another purpose may not be used to make experimental models.

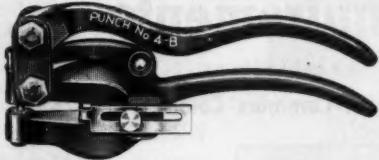
3. Models may not be distributed to promote sales or create demand and shall not be displayed to the trade or the public. Production of samples is specifically prohibited.

Refrigeration Repair Inventory

REPAIR and replacement parts for commercial refrigeration equipment and materials or finished goods sold to a supplier under Priorities Regulation No. 13 are exempt from Suppliers' Inventory Limitation Order, L-63, the War Production Board said August 8.

By amendment, L-63 includes the above items in List A, which specifies goods not defined as "supplies" within the meaning of the order. L-63, in force more than a year, established supplier inventory controls for such items as electrical supplies, hardware supplies, automotive supplies, plumbing and heating supplies, restaurant supplies.

A REAL Time Saver



The No. 4B PUNCH by Whitney

This punch is accepted by leading contractors and dealers as a real time-saver in the shop and on the job. Men who use it every day know it can't be beat for clean, fast punching. Has a capacity of $\frac{1}{4}$ " through 16 ga., weight 3 pounds, $8\frac{1}{2}$ " in length, depth of throat, 2". Complete tool includes three punches and three dies of specified sizes with die adjusting key.



Why

FRONT RANK

Provides
Ample Space
Between
POUCHES!



THE tremendous heat generated in a steel furnace would, if not quickly transferred to the surrounding air, soon melt the metal and cause heavy repairs as well as smoke, carbon monoxide gas and danger of fire.

It is necessary that all parts of the heated surface be properly ventilated by freely circulating air. This serves the double purpose of absorbing heat from the air to warm the home and cooling the surface of the furnace, preventing damage.

Furnace designers learn to know the "hot spots" where air does not readily reach the surface in sufficient volume to perform this double function. One of these spots is under the feed pouch and above the ashpit pouch. Another is above the feed pouch where the casing is narrowed by the front.

On the FRONT RANK drum generous space is provided between the front and drum proper, both above and below the feed pouch. The top of the pouch is streamlined to induce currents of air to flow through the spaces provided, as is clearly shown in the above cut.

Dealers—FRONT RANK has the features that mean Sales and Profits for YOU. And it has the facilities to capably serve you NOW. Order from your Jobber.

FRONT RANK FURNACE CO.

DIVISION OF LIBERTY FOUNDRY CO.
2500 OHIO AVE., ST. LOUIS 4, MO.

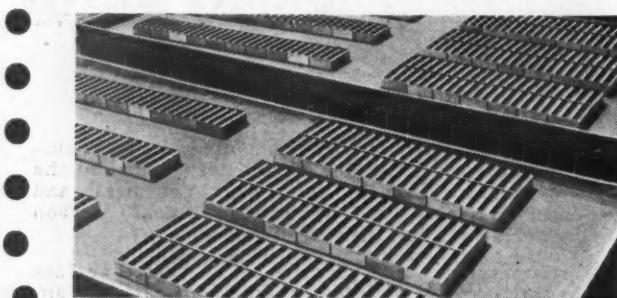


Quiet RANDALL PILLOW BLOCKS

Insist upon
Randall-equipped
units always.

For the longest possible trouble-free service . . . for quiet operation . . . for pillow blocks that are designed especially for air handling work . . . you want Randall Pillow Blocks. Self-aligning, self-lubricating, economical. Write for Randall Catalog No. 42 today.

RANDALL
GRAPHITE PRODUCTS CORPORATION
DEPT. 110 607 WEST LAKE ST. CHICAGO, ILL.



• This is the type of roof ventilating system

you should be able to give your customers to revamp their factories for peace-time production. It pays you to investigate NOW . . . how the

Swartwout AIRMOVER
can fit into your business. Write to The
Swartwout Company, 18511 Euclid Ave.,
Cleveland 12, Ohio



Swartwout

Specialists in Air Movement
by *Natural* Methods

Roofing Price Raise

MANUFACTURERS' present ceiling prices for all asphalt and tarred roofing products sold in States east of and including Montana, Wyoming, Colorado and New Mexico may be increased by 3 per cent after August 17, 1944, the OPA has announced.

Resellers of the products may pass on actual dollars-and-cents increases resulting.

The three per cent increase in net prices for manufacturers is required in order to return to the industry in the area covered by the adjustment the average annual aggregate net return earned during representative peace-time years, and constitutes the minimum increase required by law, in conformity with the Emergency Price Control Act of 1942, as amended, and Executive Orders Nos. 9250 and 9328, OPA said.

(Amendment No. 4 to Revised Price Schedule No. 45—Asphalt or Tarred Roofing Products—effective August 17, 1944.)

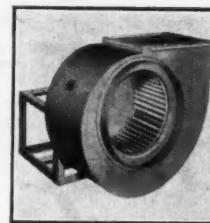
Poor Gas Troubles?

Here's a tip that may be very helpful to the sheet metal worker passed on to me by George H. Martin, (The Furnace Man of Athens) Athens, Ohio. He had a lot of trouble recently with his gasoline fire pots. Due to the poor quality of gasoline now available, the burners would carbon up very rapidly. George has found an answer to this problem by putting one pint of Sohio Upper Lube into five gallons of gas. Products similar to this can be bought from most any filling station under various trade names.

Oscar Erk, F. O. Schoedinger,
Columbus, O.

YOUR BLOWER Requirements

AVAILABLE AT
Schwitzer-Cummins Company



★ BLOWERS FOR EVERY PURPOSE

Double Inlet and Single Inlet

HY-DUTY Blowers, 9 3/4" to 25" • Top and Bottom Horizontal, and Top and Bottom Vertical Discharge • Top and Bottom Motor Mounting • Dual Units also available.



★ CENTER DISC WHEEL—Double Inlet, Double Width • Reinforced Center Disc • Designed for Modern Air Conditioning and Heating Applications • Sizes, 4 1/2" to 50".



★ ENGINEERING DATA—Write for Catalogues showing complete Performance Data • Experienced Engineering Department available to help solve your Air Handling Problems.

BLOWER DIVISION
SCHWITZER-CUMMINS COMPANY
1145 EAST 22ND STREET INDIANAPOLIS, U. S. A.

With the Manufacturers

Elgo Shutter & Manufacturing Co., 6970 W. Jefferson Avenue, Detroit, announces that Earl A. Soules, sales manager since November, 1937, took up new duties in the distribution of the Robbins & Myers "Moyno-Pump" on August 1st for the State of Michigan, through the Advance Fan & Blower Company of Detroit.

George A. Soules (Earl's brother), who has been factory superintendent since 1935, becomes sales manager.

Howard L. Angel has been appointed District Manager of the Chicago office and warehouse of C. G. Hussey & Company—copper and brass products. Mr. Angel for the past several years has been with the Copper Section of the War Production Board in Washington, and prior to that time was associated with both the Pittsburgh and Chicago offices of the Hussey organization.

The Rybolt Heater Company of Ashland, Ohio, announces the appointment of E. T. Selig, Jr., as Director of Engineering as of September 1st.

Mr. Selig's most recent connection was with the construction of the Geneva Steel Works at Geneva, Utah, a \$200,000,000 plant which has just been completed.

Prior to this project he was Chief Mechanical Engineer for the construction of Camp Hale, Colorado, the training center for ski and mountain troops of the United States Army.

Following his graduation from Dartmouth, Mr. Selig was Mechanical Engineer and Treasurer of Fuel Savers, Inc., Harrisburg, Pennsylvania, manufacturers and installers of fuel-burning, heating, ventilating and air-conditioning equipment. His inventive and designing ability is further attested by several United States and Canadian patents which he was granted relating to combustion control systems.

WHITNEY-JENSEN PRODUCTS 30 YEARS EXPERIENCE

18" PRESS BRAKE

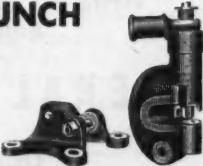
**CAPACITY 14 GA. IRON
47 STROKES PER MIN.**

Specially designed to meet the need for a small power-driven press brake to handle moderate-sized work in jobbing or production shops. Specifications include 1" length of stroke, 1" adjustment, 1 h.p. motor, 11½" throat height, 6½" throat depth. Ram and die shoes are machined to take standard ½" tongues. Powerful, extremely sturdy, fast, easy to adjust, accurate, with many practical features.



NO. 20 BALL BEARING PUNCH

Powerful ball bearing screw action gives tremendous punching power in a light-weight tool. Capacity, ½" hole in ½" iron. Weight only 20 lbs. Bench base available for fixed operation.



WHITNEY METAL TOOL COMPANY
91 FORBES ST. • ROCKFORD, ILL.

YOUR POSTWAR MARKET . . .

WILL YOU BRING OUT A NEW ITEM?

Is Your Production Cost High?

Are You in a Critical Labor Area?

Wysong and Miles manufacturing facilities are greatly enlarged for war production. When V-Day comes we will have open capacity for the manufacture of machines and metal products, in addition to our regular lines of machinery.

We are in a favorable labor zone. Most of our skilled workers have been with us for years — some for over 30 years — they have the "know how". Our plant facilities, plus an organization accustomed to precision work on a production basis, may be the answer to your postwar production problem.

You may save money by having us assume production of your new item. You may profit more by letting us manufacture your prewar product.

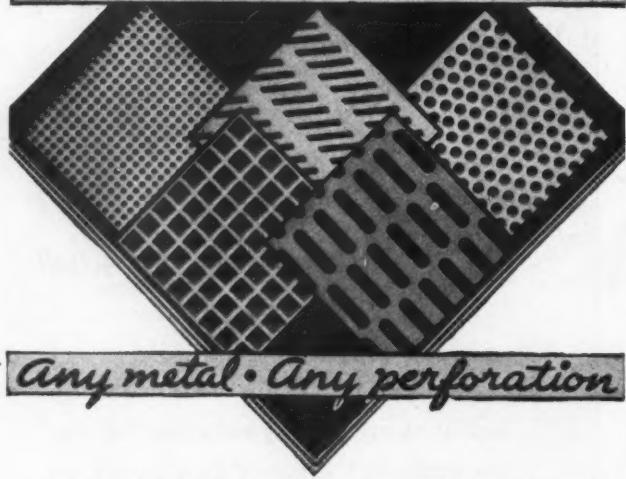
It's worth investigating. We earnestly solicit consultations.

*Write our Postwar Planning Department,
giving full details; our immediate
consideration will be given.*

WYSONG and MILES CO.
Designers and Builders of
MACHINE TOOLS AND WOODWORKING MACHINERY FOR OVER 40 YEARS
GREENSBORO, NORTH CAROLINA

Keep YOUR production in gear . . . for VICTORY

PERFORATED METALS



Any metal • Any perforation

H. & K. Perforated Metals are accurately made and embrace a great variety of perforations for use in screening, grading, ventilating and straining of different substances.

Tell us your requirements and we will send booklet showing actual sizes of perforations.

The
Harrington & King
PERFORATING
CO.

5649 Fillmore Street, Chicago - 114 Liberty Street, New York

All these
Standard Shapes
made with
LOCKFORMER



Standing Seam Locks

Pittsburgh Locks

Double Seam Locks

Drive Cleats

Right Angle Flanges

Over 5,000
Lockformers
now in use.

Write for
illustrated
catalog



The Lockformer Co.
4615 Arthington St.
Chicago 44, Illinois

Suggested Fuel Savings Report

(Continued from Page 73)

joists and wood floor 1 in.), factor .28 x 84
= 24

Inside walls: 224 x 27 = 3.8
Floor: 210 x 24 = 5.2

Total infiltration: 9.0

In this room infiltration would equal 73 per cent of the maximum heat demand of the room, coming through inside walls and floor. The maximum low temperature of this room would be 47 F with outside temperature 14 below zero.

One other controversial point is the difference between authorities in heating as to the approved temperature difference for heat loss calculations in the Milwaukee area. The American Society of Heating and Ventilating Engineers' Guide gives the lowest temperature as 25 below zero, and the recommended design temperature as 10 below zero, making 80 degrees temperature difference. On the other hand, the Heating, Ventilating and Air Conditioning Code, issued by the Industrial Commission of Wisconsin, places Milwaukee in Zone 3, with coldest temperature recorded 24 below zero, with design temperature of 14 below zero, making 84 instead of 80 degrees temperature difference, or a difference of 4 degrees more than the Guide. The total average degree days given in the Guide record Chicago 6027 and Milwaukee 7152,

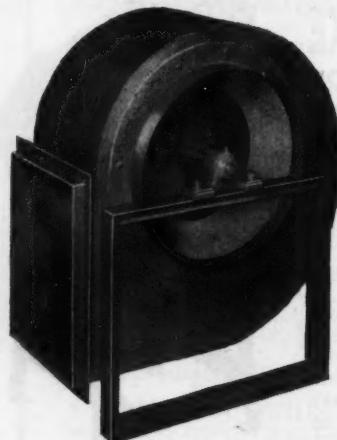
"GENERAL" MULTIBLADE EXHAUSTERS

A Full Line

Forward
and
Backward
Curved
Blades

All Drive
Arrangements

Surprisingly
Quick
Deliveries



Forward Curved Blades

Write for the New "Blue Book"
Bulletin SC-101

GENERAL BLOWER CO.

400 N. Peoria St. Phone Canal 6340
Chicago 22, Ill.

NEW YORK 6, N. Y.
120 LIBERTY ST.
PHILADELPHIA 6, PA.
148 NORTH 4TH ST.
PITTSBURGH 19, PA., FIFTH-GRANT BLDG.
CLEVELAND 7, OHIO
1084 LAKELAND AVE.
DETROIT 2, MICH.
7644 WOODWARD AVE.

showing Milwaukee has an average of over 1000 degree days more than Chicago.

It would seem from the above that the state of Wisconsin requirements of 84 degrees temperature difference for the Milwaukee area is good practice to follow in heat loss calculations. And also that contractors in cold states may do well to use local conditions to determine actual temperatures in unheated rooms rather than some arbitrary temperature.

Costing Method For "Service" Sales

(Continued from Page 49)

totaled each month and divided into the truck operating expense to get the cost per mile, then multiply by the mileage used by the service department to get the truck expense allocated to it. In the small establishment, the same truck usually covers all work so the contractor must prorate this expense.

Labor hours charged to jobs is also supplemental information. Labor cost is already charged in the cost of labor on the summary. If the service department has its own payroll expense, servicemen working exclusively on service jobs, their payroll is entered as payroll expense for the month and any hours not sold are non-productive. If servicemen also make installations, the hours chargeable to the service department are considered payroll expense. The difference between the hours charged to the service department and what customers pay for service is non-productive.

SHEET METAL MEN should know more about this machine



KALAMAZOO
Metal Cutting Band Saw

**SAVES
EVERY
DAY
in your
SHOP**

Why let high priced labor cut by hand—lengths of angle iron—rods—tubes—bars, etc.—when this low priced machine does these jobs with amazing Speed and Accuracy? Pays for itself in Labor Saving and Steps up Production. Scores of shops say "just what we've always wanted."

Write for bulletin.

MACHINE TOOL DIVISION
Kalamazoo Tank & Silo Co. — Kalamazoo, Michigan

MASTER TEMPERATURE CONTROLS



**We've Been Busy as the
Proverbial One-Armed
Paper-Hanger.**

From the earliest stages of the war, our main capacity has been devoted to the making of important electrical war items for the Navy and Air Corps—proof of our skill and experience of more than a quarter century spent in making temperature controls. The many things we have learned in executing these contracts will be reflected in even finer products for the post-war period.

In spite of our most earnest efforts, many of our customers have not received all of our products that they wanted or needed while we have been fulfilling war contracts. We have done the job of supplying them to the best of our ability.

Soon—we hope—we will return with full capacity to our regular line of controls . . . with many new items and post-war improvements.

WHITE MANUFACTURING CO.
2368 University Ave. St. Paul, Minn.

VITROLINER Porcelain Enameled SMOKE JACKS

Write us for prices if your specifications call for porcelain enameled **SMOKE JACKS** (for army camps, forts, etc.) or for Underwriters Listed Flues (FPHA Housing Projects).

The Vitroliner Type E Flue is listed by Underwriters Laboratories and is not limited to gas alone but is listed for ALL Fuels.

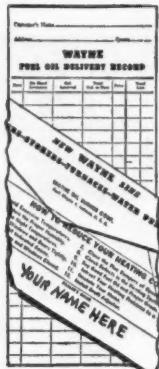
The U.L. Label is on every Vitroliner Type E Flue.

Write today for prices. Your order will receive prompt shipment.

CONDENSATION ENGINEERING CORPORATION
122 S. Michigan Ave., Peoples Gas Bldg., Chicago 3, Ill.

New! Convenient!
HEATING RECORD
CONTAINER
For Your Customers

FREE
TO ALL OIL BURNER
and FUEL OIL DEALERS



As illustrated—especially designed as a container for fuel oil ration coupons. Front has place for customer's name and ruled form for keeping a complete record of fuel oil purchases. Reverse side lists 12 points on how to save fuel and has place for dealer imprint.



A gift your customers will appreciate—and its FREE—to help you build post-war business and to get profitable service and accessory sales now. ORDER TODAY. State number desired using your business letterhead.

WAYNE VICTORY HEATING MANUALS

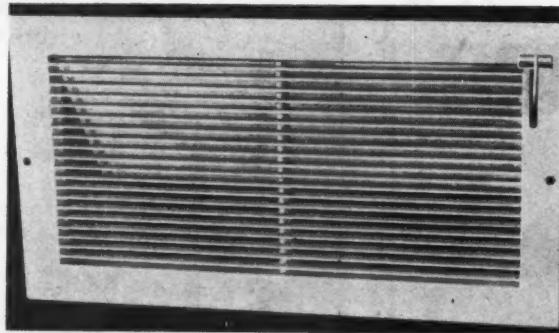
They're FREE to all Oil Burner and Fuel Oil Dealers. Order your supply of these manuals now. State number needed using your business letterhead.

WAYNE OIL BURNER CO., 919 GLASGOW AVENUE
 FT. WAYNE 4, INDIANA

WAYNE'S V-DAY LINE **WILL BE**
COMPLETE

REGISTERS AND GRILLES

Fabricated
 or
 Stamped
 ♦
 Quick
 Shipment



Manufacturers' Representatives handling affiliated lines are invited to contact us promptly.

Stewart
 Manufacturing Co.
 309 Washington Street
 Orange N. J.

Majestic
FURNACES
 For Better Heating!
 Handled Exclusively Through
 Established Dealers

Seasoned With 40 Years Experience

SOMETHING COOKING

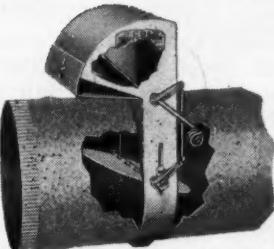
... In New
 Developments
 For The Future

The Majestic Co., 912 Erie St., Huntington, Ind.

CSE

DRAFT CONTROLS

More Fuel Saving
by CLOSER CONTROL

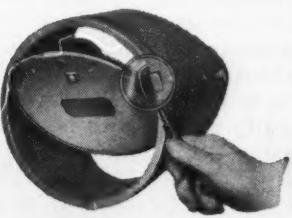


Cole Draft Governor

The leading oil burner control. Internal damper type. Can be installed on any angle without taking down pipe. Models for all standard domestic pipe sizes from 5" to 18", and for industrial installations, any size or type, up to 5 feet.

Draft Korektor, Type "F"

A low cost, open check control for stoker and oil burner installations. Close-fitting, finely balanced blade swings on knife-edge pivots. Two sizes with universal sleeves, fit all standard pipe sizes from 8" through 12".

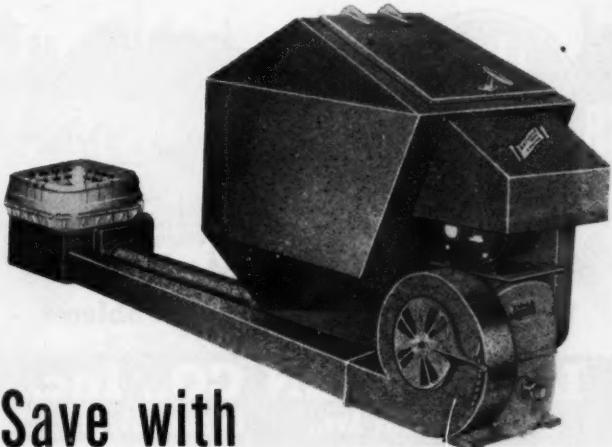


C. S. E. closer barometric control assures 10% to 25% fuel savings. For many of your rationed customers these savings may mean the difference between acute heat shortage and solid comfort this winter! Remember the payoff—customer satisfaction. Write us now.

Fuel-Saving
Starts With
CONTROL

Cole-Sullivan Engineering Co.

1318 No. Third St., Minneapolis 11, Minn.



Save with Schwab Safe Stokers

Schwab Safe Stokers are economy engineered . . . Schwab economy means dependability and efficiency of the highest standard.

There is a Schwab Safe Stoker for every domestic, industrial and commercial need. All Schwab Safe Stokers are built for long, continuous, trouble-free service. Line up with Schwab now!

Write for complete information. Schwab Safe Stokers are backed by 70 years of manufacturing experience.

THE Schwab Safe Company
LA FAYETTE, INDIANA



Penguin Pete says: . . .

PREPARE NOW FOR THE POST WAR RUSH IN HOME AIR-CONDITIONING

You needn't wait for "re-conversion" with Palmer products! They have been manufactured continuously throughout the war, and are now available with post-war improvements. Investigate:

SNO-BREEZE
EVAPORATIVE COOLERS
QUIET ZONE BLOWERS
PALMER FURNACES

Palmer
MFG. CORP.
PHOENIX, ARIZONA



WILL WILLIE WILLIAM BILL

4 Little "Fitting" Guys Fighting For You!

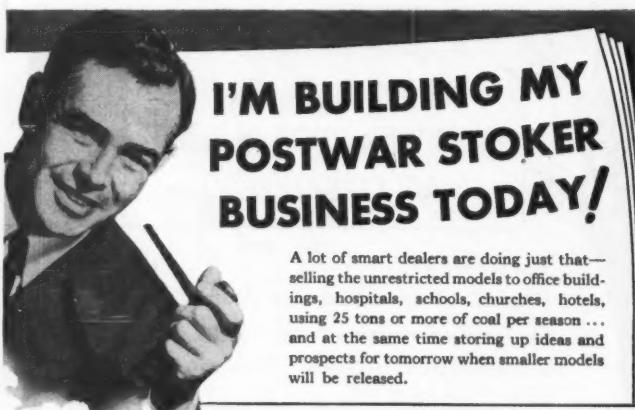
Will cuts installation costs—Willie makes fittings fit—William keeps prices down to bed rock—and Bill sees that there is stock near you.

FLASH NEWS! Complete, simplified line Gravity Pipe and Fittings now available on rated orders—24 hour service and shipments.

FREE. Complete, easily understood gravity pipe and fittings catalog showing full simplified line. Write Dept. 2 for prices and catalog.

THE WILLIAMSON HEATER COMPANY
CINCINNATI 2, OHIO

WILLIAMSON
WARM AIR FURNACES



I'M BUILDING MY POSTWAR STOKER BUSINESS TODAY!

A lot of smart dealers are doing just that—selling the unrestricted models to office buildings, hospitals, schools, churches, hotels, using 25 tons or more of coal per season ... and at the same time storing up ideas and prospects for tomorrow when smaller models will be released.

It's a fine time to start, and you will be off to a good start with

GEHL STOKERS

- Engineered to do a better job for more years by a 77-year-old company.
- Established consumer acceptance.
- All-cast chassis that resists rust and corrosion.
- Barometric, automatic control of chimney draft, and many other advantages that make sales and satisfied customers.

WRITE TODAY for literature and dealer plan. Be ready for the big postwar demand.

GEHL BROS. MFG. CO.
Established 1867 Dept. BJ-803 West Bend, Wisconsin

A GEHL WINS FRIENDS WHEREVER IT GOES



Models for factories, warehouses, public buildings, office buildings, apartment buildings, schools and churches.



PENN-AIRE FURNACES GRAVITY, CAST IRON

*Popular Price
Practical Design
Economical Operation*

UNION MANUFACTURING CO., INC.
BOYERTOWN, PA.

AIR HEATING enough information to be able to derive the equations.

2. The trend towards rating as determined by actual tests of equipment is strong and should be maintained. Eventually, it is hoped that all of these ratings based on arbitrary physical dimensions can be eliminated. This will take years, however. In the meantime, IN ORDER TO AVOID THE GREAT AMOUNT OF CONFUSION now existing in the field, it is hoped that the entire industry will adopt this UNIFORM method of rating. If adopted, this method will be used in the Association design manuals, in the Association textbooks, and will be submitted to the F. H. A., to city councils, and to other agencies that are interested in furnace ratings.

3. Some question has been raised about ratings for anthracite. The data upon which all of the rating formulas were based were actually obtained with anthracite as a test fuel. Some engineers have made a practice of reducing the rating of the furnace by about 15 per cent when anthracite was used. Any such reduction is (in the opinion of the research staff) a matter to be decided by the individual company. It is believed by the staff that the reason, if any, for the reduction in capacity is not brought about by decreases in efficiency but by the increased drafts necessary for burning anthracite. The draft requirements will depend upon the type of furnace. Some furnaces will be able to burn anthracite at a 7.5 lb. combustion rate with drafts available in the ordinary chimney while others may experience difficulty. If the industry engineers feel that a universal rule should be adopted, the code committee and the staff will be willing to listen to proposals.

4. These proposals are not in final form.



...Has The **RIGHT**
SODERING FLUX
For Every Sheet-Metal Job!
Let Us Help You With Your Problems

L. B. ALLEN CO., Inc.
6702 Bryn Mawr Ave., Chicago, 31, Ill.



ADAMS CAST IRON FLUE THIMBLES

WILL NOT RUST OUT
PAINTED BLACK

THE ADAMS COMPANY
BRIDGE STREET,
DUBUQUE, IOWA



DuraBilt Floor Register

DuraBilt Floor Registers & Cold Air Faces

- ★ Cross-locked assembly for surplus strength and rigidity.
- ★ All-steel flat bars—mortised at joints, close fitted, perfectly aligned and level.
- ★ Face securely interlocked to frame by tenons at every connection.
- ★ Greater open capacity for air-flow.
- ★ Close mesh design ($\frac{1}{16}$ " x $1\frac{1}{8}$ " openings) to exclude french heels and small objects, ample for free air flow.



DuraBilt Cold Air Return

THE AUER REGISTER COMPANY, Cleveland, O.

AUER REGISTERS & GRILLES

For Air Conditioning and Gravity

Simplex Automatic Draft Controls

For Greatest Fuel Economy

NEW RUST PROOF

5 in 1

"SIM-TROL"



The SIM-TROL control with Simplex adjustable sleeve is adjustable to breechings (or smoke flues) from 8" to 12" inclusive, which covers the range of most domestic heating plants. Will save up to 25% in fuel; maintains draft at 1/100 of an inch of the desired point under all conditions.



Type "A" Industrial Control

References, as to efficient operation and economies effected by Simplex Controls on plants of various sizes up to 1,800 H.P. can be furnished. In many cases savings of over 25% have been made.

Most complete line of Barometric Controls for every size heating plant. Write for full descriptive circulars.

SIMPLEX
MANUFACTURING COMPANY
FOND DU LAC, WISCONSIN

Premier FURNACE CLEANER

BUILDS UP
SERVICE VOLUME!



The sturdy Premier Furnace and Boiler Cleaner works as your best ally in developing service business in *volume*—it gives you first-hand knowledge of needed repairs while it brings you profits on cleaning jobs! It's rugged and powerful, yet compact and light weight—easily carried and operated by one man. Write today for complete information.

NEW IMPROVED MODELS

Completely Equipped

5/8 H.P. . . \$74.50

1 H.P. . . \$89.50

ELECTRIC VACUUM
CLEANER CO., INC.

1730 Ivanhoe Rd. • Cleveland, O.

ATH-A-NOR Furnace Repair Parts



The furnace choice of dealers who know performance and saleability has been Ath-A-Nor for more than 50 years. Quality, economy and efficiency have always distinguished the Ath-A-Nor line. Replace with Ath-A-Nor to insure maximum performance and fuel economy! And continue to pile up scrap for munitions and see that it reaches government agencies speedily!

MAY-FIEBEGER COMPANY

MANUFACTURERS OF QUALITY HEATING EQUIPMENT FOR

OVER 50 YEARS

NEWARK, OHIO

There's Good Profit for You
in Selling

MONMOUTH HUMIDIFIERS

- For all warm air systems.
Descriptive Bulletins and prices
on request.

Formerly made by Monmouth Products Co.
Now produced by

THE CLEVELAND HUMIDIFIER CO.

7802 Wade Park Ave., Cleveland 3, Ohio

CHENNEY
METAL
LINE

- SUPERIOR TO
GALVANIZED IRON
- WEATHER PROOF
- FIRE RETARDANT
- MOISTURE PROOF
- FORMS EASILY WITH
REGULAR SHOP TOOLS

The
Modern
SHEET
METAL

CHENNEY METAL PRODUCTS CO. TRENTON, N.J.

WRITE FOR DESCRIPTIVE FOLDER AND THE
NAME OF YOUR NEAREST DISTRIBUTOR

Bremil PORTABLE SHEARS

Your work will proceed faster and neater when you use Bremil Portable Shears on the job or in the shop. Write today for literature showing complete line.

ALL-ALLOY No. 2 cuts up to $\frac{1}{4}$ " steel plate.

ALL-ALLOY No. 1 cuts up to No. 11 gauge strip or sheet.
Special blades may be obtained for shearing stainless steel.

BREMIL MFG. CO., ERIE, PA.

REPAIR PARTS

For all

Furnaces - Boilers - Stoves

GUARANTEED TO FIT

All indications point to a shortage of repair parts.
Get your orders in to us while we still can supply
you.

Now we can give you prompt attention as our
stock is very complete.

A. G. BRAUER SUPPLY CO.
2100 Washington Ave. St. Louis, Mo.

Kruckman — The Job of Reconversion

(Continued from page 51)

here either blames the industry or the Government clearing committees. They function solely upon those needs within their authority. They have no knowledge of the others. Apparently what is lacking is some coordinating clearance machinery. Yet, on the other hand, Krug, very properly, lays down as one of his initial purposes the aim to simplify the machinery of Government and to reduce the number of Government controls imposed upon the business man.

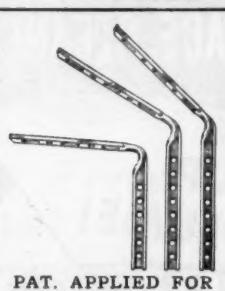
Meanwhile, within WPB, the usual reaction has set in. Almost daily there are announcements, usually overlooked, that some official in the higher brackets has quit and is going back to his civilian job. Many in the less conspicuous but importantly useful brackets are either looking around for jobs outside of Government or in some of the more permanent agencies. At the time this is written these largely unknown persons are carrying on the essential business of WPB and are wondering what cyclonic phenomena are happening up on top.

It is illustrative that gossip generally has it that Director William Y. Elliott of OCR will leave. But Dr. Elliott himself vehemently repudiates the suggestion. On the other hand, the Planning and Research Staff of OCR, which is now headed by Donald R. Longman, recently transferred from the Service Trades Division of OCR, is expected to have a very vigorous part in laying out some of the chart for the new program of WPB. Rightly or wrongly, the Planning and Research Staff of OCR has been regarded

IMPROVED!

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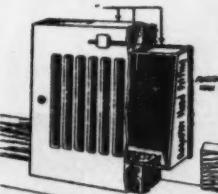
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Tornado Furnace and Boiler Cleaners use only full size, genuine G. E. motors, with ruggedness and power, and equipped with tools to do a better job, saving time, effort and money. Request details.

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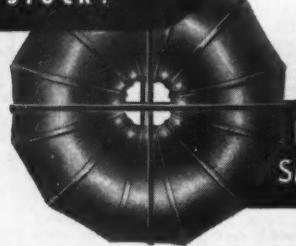
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as one of the last strongholds of the most liberal progressives of the New Deal. Dr. Longman himself is one of the men brought from the faculty of a Middle Western college. He feels there are some functional activities of the national economy which can be done better by collective effort of the people, through Government, than by the units of private industry. Dr. Elliott also came into the Government through the New Deal from Harvard and from Vanderbilt University. Yet a direct collision over policy with Dr. Elliott caused Dr. Longman to leave his job as Director of the OCR Service Trades Division and take over the direction of Planning and Research Staff.

Which Way Will WPB Go?

It is doubtful if at this writing there are many officials in WPB, high or low, who have a clear idea about the immediate direction in which WPB will go. Those who wish to stay hope it will be converted into the machine which will regulate reconversion. On the other hand, most of the other agencies of Government harbor the same hope. It may surprise you to learn that Crowley's Foreign Economic Administration sincerely feel it is entitled to many functions of reconversion. This agency naturally will gradually be out of some of its temporary work when it must relinquish many of its activities to the Department of State. OPA also has a settled idea that it must have a major part of the reconversion job. Naturally the Department of Commerce thinks it is the logical medium to convert economic war activities to peacetime industry. One of the most eager contenders for a big slice of the job is Maury Maverick and his Smaller War Plants Corporation. He may be a sophomore in industry, but he is a post graduate in politics.

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Reconversion is a stupendous job which requires a tremendous organization. It is easy to appreciate why there is an extraordinary back-stage, behind-the-scenes activity now going on here to control it or to have an important part of it. Even the President has recently taken a hand by directing the Office of the Budget to make a complete statistical record of industrial production, employment, unemployment, and wages for the record year of 1944. This will take the place of the regular Census of Manufacturers. It is called the Reconversion Census. Even in politics the Republicans have sought to make Reconversion a major issue in order to force the Democratic candidate to step down from his aloof elevation as Commander-in-Chief.

There are those who look upon most of the plans and approaches to reconversion as flimsy, puttering, and timid. They see no decisive crystallization until after the election. Even if Congress enacts the Demobilization and Reconversion bill, it is not expected the law would be galvanized into life until late in December or in January. The George-Doughton Act, still to be completely jelled, would establish the Office of War Mobilization and Reconversion and would create the job of a director to serve two years at a salary of \$15,000 per year. Several agencies now in existence would be absorbed, particularly the Surplus War Property Administration and the present Office of War Mobilization. The bill stresses the rights of smaller business and vests great power in the Chairman of the Smaller War Plants Corporation, who now is Maury Maverick. The bill would provide means by which those dislocated by reconversion and without income would be given substantial relief by the Government. The proper discussion of this proposed law requires a report of this kind all by itself.



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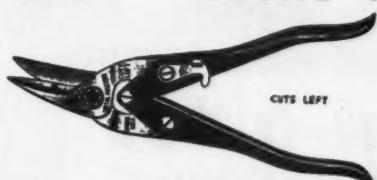
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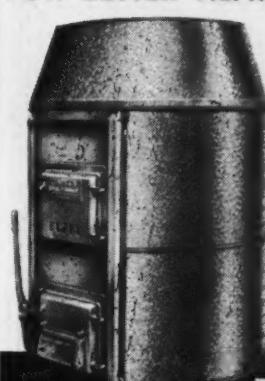
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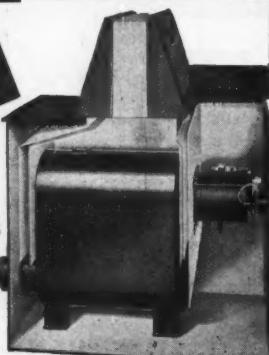


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AIR-CONDITIONING NOISES

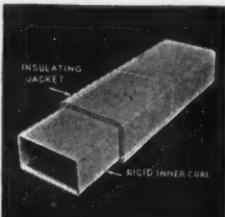
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A. O. Smith Corporation, 3533 N. 27th St., Milwaukee 1, makers of SMITHway stokers and SMITHway gas and electric storage water heaters for the home market, is in war production, turning out in large volume bombs, torpedo air flasks, landing gear for heavy bombers, and hollow steel propeller blades for airplanes.

Syncromatic Corporation, 3373 N. Holton St., Milwaukee 12, is engaged about fifteen per cent in shipwork.

Former Vice President Lt. Henry M. Stillman, Senior Grade, has been home for a month after combat on a carrier for two years in both the Atlantic and Pacific. He is now training navigators at Bremerton Navy Yard.

Lt. Stillman was impressed with the growth of the organization and the many new faces, and the company reports lots of room for the boys—good ones—coming back from the Army and Navy.

All members of the firm have relatives in the service.

The Honorable Robert P. Patterson, Under Secretary of War, has notified the men and women of the Wales-Strippit Corporation, North Tonawanda, New York, that they are to be honored by being presented with the coveted Army-Navy "E" Production Award on Friday, September 1st.

This Corporation specializes in the manufacture of patented hole punching and notching equipment which is used not only by every aircraft manufacturer in the United States and many Allied countries, but throughout the metal fabricating industry.

Formal presentation ceremonies will be held at the plant in North Tonawanda, Friday, September 1st, at 4:30 p. m.—George F. Wales, President.

Marshall Furnace Co., Marshall, Michigan, is in war work making marine propellers, Diesel engine parts and other gray iron castings—about 82 per cent of present business. Forty-seven men from the plant and office are now in service, among them:

Lucius Tanner, Engineer, in European theater.
Vern Kraushaar, Engineer, in South Pacific.
L. H. Smith, salesman, Inspector, FHA.
Chas. Bush, salesman, Civilian job, Fort Custer.
H. V. Herrington, salesman, in war industry.
George Dean, salesman, in war industry.
A. F. Herbert, salesman, in war industry.

The company has started a new bronze foundry in another location.

There have been large company purchases of war bonds and ten per cent payroll deductions since Pearl Harbor.

A son of the president and a son of the credit manager are in the Air Corps, now flying over Europe; a son of the foreman of the sheet metal department in the Air Corps over Europe was shot down and is now a prisoner in Germany. One former shop foreman has been in the Navy nearly three years, most of it in the South Pacific.—C. S. Stout.

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FURNACES

DURABLE • EFFICIENT • DEPENDABLE • ATTRACTIVE

THE FOREST CITY FOUNDRIES CO.

2500 WEST 27TH ST. • CLEVELAND 13, OHIO

TRADE NEWS



Victor Electric Products, Inc., Cincinnati, Ohio, is manufacturing fractional horsepower motors for U. S. Army Air Corp and U. S. Navy used for feathering propellers, ammunition boosters; plunger assembly for Chemical Warfare Service; and torpedo plates for U. S. Navy. About 90 per cent of present business consists of war orders. The following are new officials:

T. R. Harris, General Manager.
 L. E. Gaut, Sales Manager.
 Frank Uhling, Controller.
 A. G. McBeth, Mgr. Methods Department.
 H. E. Danby, General Superintendent.
 R. C. Lauer, Personnel Director.

On the Fifth War Loan drive, Victor Electric was one of the first plants to meet their quota before opening the drive.—R. C. Lauer.

The Heil Company, Milwaukee, has 1,200 men in service, and about 90 per cent of present business consists of war orders. The company produces aircraft refuelers, smoke generators, cargo bodies and hoists, bulldozers and trailbuilders, scrapers, bottom dump wagons, torpedo tubes, combat tank hulls and turrets, gun limbers and Bogeys, axles, winches, swing cranes, cargo plane loaders, shell washers, and blood plasma and Penicillin bottle washers.

Two new large manufacturing buildings have been added to the plant and many changes have been made in top personnel.

Heil Company has oversubscribed quota on every war bond drive to date. They have been awarded the Army-Navy E plus two stars, the Ordnance award, the Army Airforce Class A rating award. Plants 1 and 3 were recently visited by General William S. Knudsen and Air Force General O. R. Cook, who expressed satisfaction with the great production record.—Walter Haise.

Booth Sheet Metal Works, Beaumont, Texas, manufacturers of marine and industrial sheet metal products and government approved metallic lifeboats, has been awarded the Army-Navy "E" award to be presented at a ceremony on Saturday, August 12.

Founded by J. T. Booth in 1900, the J. T. Booth Tin Shop served the surrounding territory, the bulk of the work being for the petroleum industry and building construction. In 1937, a well-planned addition to plant and equipment made it possible to handle sheet metal fabrication ranging from 30 to 10 gauge, and the company entered the Marine sheet metal field and designed, fabricated and installed numerous sheet metal items used in ship construction—forced air ventilating ducts, galley furniture, cabinets, cowl ventilators, wind scoops, and various smaller items in accordance with specifications furnished by the shipyards. Since January, 1942, when the present co-partnership of George and Katie Booth was formed, employment has been increased from 25 to 60 employees. George Booth is general manager.—J. C. Jennings, Comptroller.

PRE-WAR STUFF!

WE have a few forced air Monogram oil burning furnaces of pre-war assembly ready for delivery. One model is 90,000 BTU capacity at bonnet; the other is of the highboy type of 70,000 BTU at bonnet.

Send us your order or write for details concerning these pre-war furnaces now!

THE QUINCY STOVE MANUFACTURING COMPANY
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Patented Damper
 Uses All the Heat
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LEADER IRON WORKS, Inc.
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Keep an eye on the events and opportunities on the horizon. Postwar planning is now becoming more intensified as the war proceeds in the direction of "V Day." Look for oil burners equipped with the Merco Visaflame.

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"GOOD WILL" REPAIR PARTS



Large and Complete Line—For All Makes of
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AUTOMATIC SHUTTER
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Detroit 17, Mich.

It is assumed some law under this title will be enacted before October 1. When it happens, the assumption here is that the President will use it to amalgamate WPB, OPA, WFA and some other agencies. The big, burning question is the identity of the person who will head this colossus. Krug is expected to remain as the actual head of the part that now is WPB. They have mentioned Fred M. Vinson, head of O. E. S., as the probable director. They also have mentioned Marvin Jones of WFA, and Jesse H. Jones of the Department of Commerce and of RFC. But the most insistent suggestion is that of the name of Donald H. Nelson. Jesse Jones is not well, so they have also urged Nelson as head of the Department of Commerce. The point to remember is that Donald Nelson is still very much in the picture.

The White House cannot brush him off because he is very, very powerful politically. His power stems from the Hill and from his personal political skill and from his very extraordinary influence in the affairs of many States. As is familiar knowledge, he was vice president in charge of public relations for Sears, Roebuck before he came to Washington. In that capacity he had intimate relations with those who are in control of State Colleges and Universities and with agricultural county agents, as well as State officials. It was part of his program which caused Sears, Roebuck to give scholarships for students in State Colleges of Agriculture and similar State institutions. Out in Utah there is a prize bull, provided by Nelson, to improve the strain of cattle, whose progeny in the State numbers over 200 prize-winning animals. During the years Nelson has often been the very sincerely welcome guest at the homes of Governors, Senators, Congressmen and innumerable State and county and city officials, and he has sat on platforms at celebrations with most of the noted persons on the Hill and in many offices in Washington. They know him often as a benefactor, and he knows them intimately. He has never appeared on the political horizon until he came here to help win the war. His development in a political sense has been astonishing. Under the circumstances it is clear why even the White House has never been able to unseat Nelson and why all the king's horses and all the king's men have not been able to brush him off. He has very real and very great power on the Hill and out in "the sticks." It is possible they think they have sent him into obscurity, just as they managed to send Wallace to China and elimination. But the chances are very great that something is cooking now that will force Nelson into the place which he may choose. There is no remote doubt he must be reckoned with.

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Roof
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All materials and sizes. Shipped in 10-ft. lengths. Dampers optional.

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Wanted—Used 16 gauge Lockformer. Must be in good condition. McArthur Sheet Metal Works, 418 Court Street, Sioux City 12, Iowa.

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FOR SALE—A blower Company established 35 years, specializing in Blower Systems, Ventilating Systems, Dust Collecting Systems, Conveying Systems, special sheet metal equipment, etc. Valuable new inventions for postwar manufacture. Aged owner wishes to retire on account of health. \$20,000 required for complete ownership, including shop equipment, tools, machines, manufactured stock, office equipment, name, good will, present and prospective customers, etc. Address Key No. 590, American Artisan, 6 No. Michigan, Chicago 2, Ill.

"Will lease or sell a first class brick building and sheet metal shop completely set-up with modern fabricating tools and power equipment located downtown in Los Angeles, California."

"This is an ideal set-up for a live wire sheet metal specialty manufacturer who wishes to operate in California or open a branch."

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American Artisan,
6 No. Michigan Ave., Chicago 2, Ill.

SALES AND FIELD ENGINEER

Automatic Controls manufacturer has several openings in various sections of the United States offering excellent postwar opportunities for young men with electrical or mechanical engineering experience. State full details, education, work background and salary expected first letter. Interview may be arranged. Address Key No. 589, American Artisan, 6 No. Michigan, Chicago 2, Ill.

HELP WANTED

Experienced sheet metal man and furnace installer. Excellent postwar future. State age, experience, size of family, salary expected, etc. Brackney Tin Shop, 313 High Ave. West, Oskaloosa, Iowa.

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48" NIAGARA POWER GROOVER; G & H HYDR. SCRAP BALER.

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POWER: 10' BERTSCH, 6" cap. ANGLE: 6x6x4" WICKES; LEVELLER: 5' NILES, 7 Rolls, 6 1/4" dia.

SHEARS

POWER: 10' x 4" LONG & ALLSTATTER, 24" Gap. ARR. M.D., Less Mtr.; 10' 10 ga. Kutschied Power Sq. AC, M.D.

RING & CIRCLE: NO. 510 NIAGARA, 6" cap.; QUICKWORK, Shears 5/32", Flanges 1/4".

ROTARY: 14 ga. YODER; 60" thr.; NO. 6 QUICKWORK, 45" Throat, 1" cap.

SPOT WELDERS

20 KVA GIBB; 25 KVA & 20 KW THOMPSON; 15, 12, 10 KVA AEF; 25 KVA GUN.

WIRE STRAIGHTENERS

%" SHUSTER, 25' 6" cutoff; 1/2" SHUSTER, 24' 6" cutoff; 7/16" WELLIS, 10' cutoff, B.D.

YARDS 5800
1433 W. PERSHING RD., CHICAGO 9, ILL.

Aviation and Air Conditioning SNIPS

No. 185. Small Size
No. 190. Medium Size
No. 195. Large Size



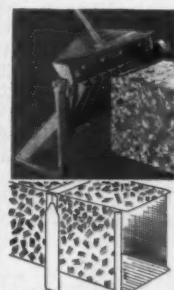
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THE COMPLETE DRIVE CLEATING MACHINE SAVES MORE TIME per joint of pipe, over ordinary hand methods, than any other machine used on square pipe work . . . and it is USABLE MORE OFTEN per job, because it edges the pipe and makes drive cleats to join them together.



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Takes All Sizes Up to 12"

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Takes All Sizes Up to 18"

SEE YOUR DEALER OR WRITE

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WAUKEGAN, ILL.

YAGER'S Soldering Salts — Paste

Reg.

Two standard sizes for all soft soldering. Safe, quick, certain. Buy them at your Jobbers or write us if we cannot supply you.

1/2 lb., 1 lb., 5 lb. cans; 2 oz., 6 oz., 12 oz.

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Electric Janitor DAMPER CONTROL

for Hand Fired Heating Plants

**SHOW YOUR CUSTOMERS
HOW TO SAVE 10% TO 30%
ON THEIR COAL BILL!**

HERE is a timely source of profits, now that materials have been released for the manufacture of Minneapolis-Honeywell damper regulators—the popular Electric Janitor.

Go to your customers and prospects; point out how the Electric Janitor means a reduction in heating costs of up to 30%! That makes it easy to show how this control soon pays for itself. Explain, too, how the Electric Janitor is smart insurance against being caught by a coal shortage. This is a powerful sales story you can use to put money in your pocket.

The Electric Janitor is made according to the same high prewar standards Honeywell has always maintained. Coming in one complete package, the unit is easy to stock—easy to install. Backed by consistent national advertising, this is an item you can push now... for profits now.

**YOUR JOBBER IS STOCKING ELECTRIC
JANITORS . . . ORDER TODAY!**



THE HONEYWELL ELECTRIC JANITOR PACKAGE

is complete—even down to pulleys, staples and wire. It includes the famous Electric Janitor damper motor, the exceptionally accurate Honeywell heat-leveling thermostat, transformer and all necessary accessories.

The Electric Janitor Package is also available, at slight extra cost, with a limit control, and also with the Da-Nite thermostat, which automatically reduces temperatures to a fuel saving level at night and automatically restores the comfort level in the morning before the family rises.

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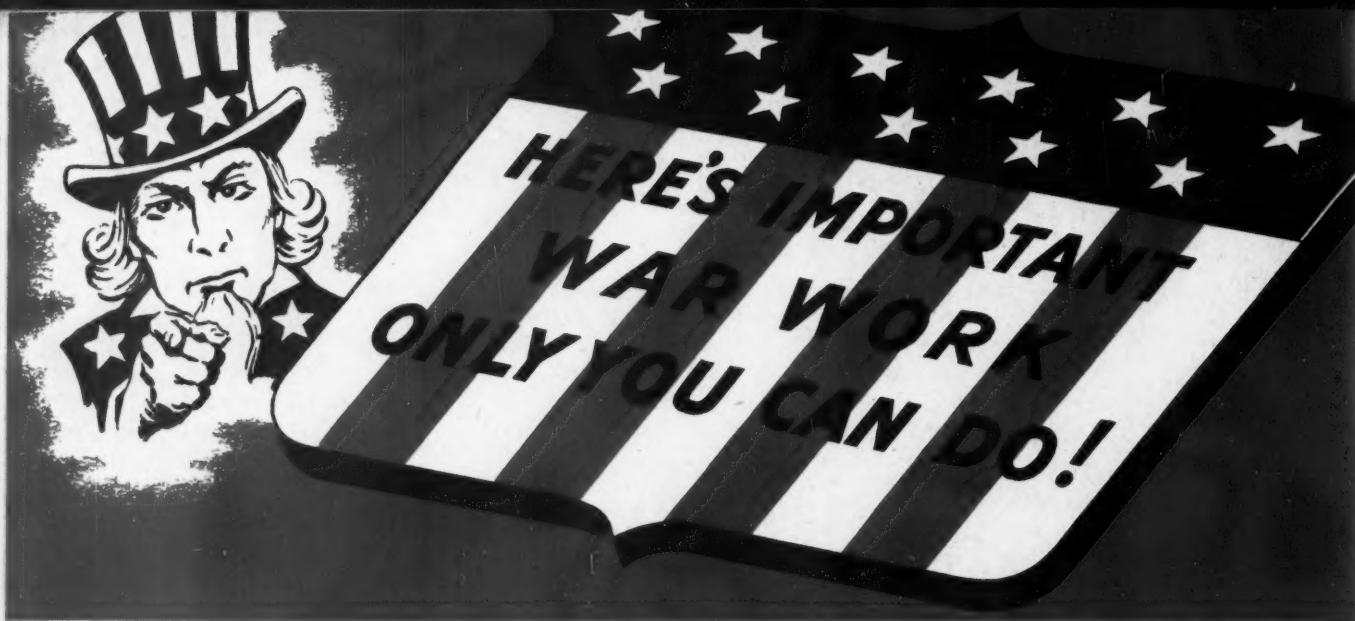
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Prepare Your Customers' Furnaces for Stringent Fuel Rationing -- Change to RESEARCH AIR FILTERS



SAVE NEEDED FUEL

All signs indicate fuel rationing will be much more severe this winter. New Research Air Filters eliminate heat wastage caused by dirty, clogged filters. The exclusive Research Rip-Clean feature will keep air flow free and give your customer maximum heating results from a diminished fuel supply.



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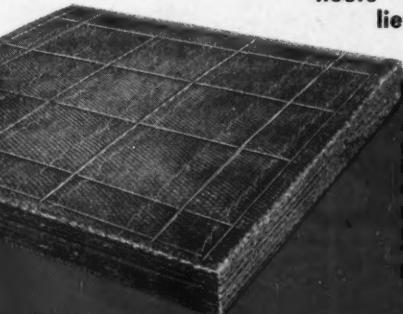


PROVIDE BETTER HEALTH

Research Rip-Clean Air Filters remove 99% of ragweed pollen and 91% of dust from the air. This high efficiency provides cleaner and healthier air for your customers to breathe, cuts down lost "man hours" and gives welcome relief to hay fever sufferers.



Advertising sales helps are provided absolutely free. Included are newspaper mats, direct mail pieces, radio spots, posters, display material, envelope stuffers, merchandising plans, furnace labels, record cards and blotters.



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RESEARCH PRODUCTS CORPORATION

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